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ABSTRACT

This report discusses what college choice means and how it works. Exploring in some detail the various definitions of choice, the report reveals what is known about the factors that influence students' decisions, and the current "status" of choice. The analysis focuses on choice in relation to federal need-based financial aid policy. Higher education policy about choice has evolved from focusing on whether students have a choice of public versus private institutions to examining whether students can choose between a two-year college, a for-profit institution, or a four-year institution. In 1999-2000, 62% of all first-year undergraduates were enrolled at public two-year institutions, and 19% attended public four-year institutions. First-year undergraduates with nontraditional characteristics were more likely to attend lower priced two-year institutions. Data reveal that patterns of enrollment have changed over the period 1989-1990 to 1999-2000, suggested a movement toward lower-priced institutions, especially community colleges, for many students. Data also show that the choice of a more expensive institution is relatively more costly for students from low-income backgrounds than for students with high-income backgrounds. The report highlights key areas to consider in future policy discussions of college choice. (Contains 10 tables and 40 references.) (SLD)

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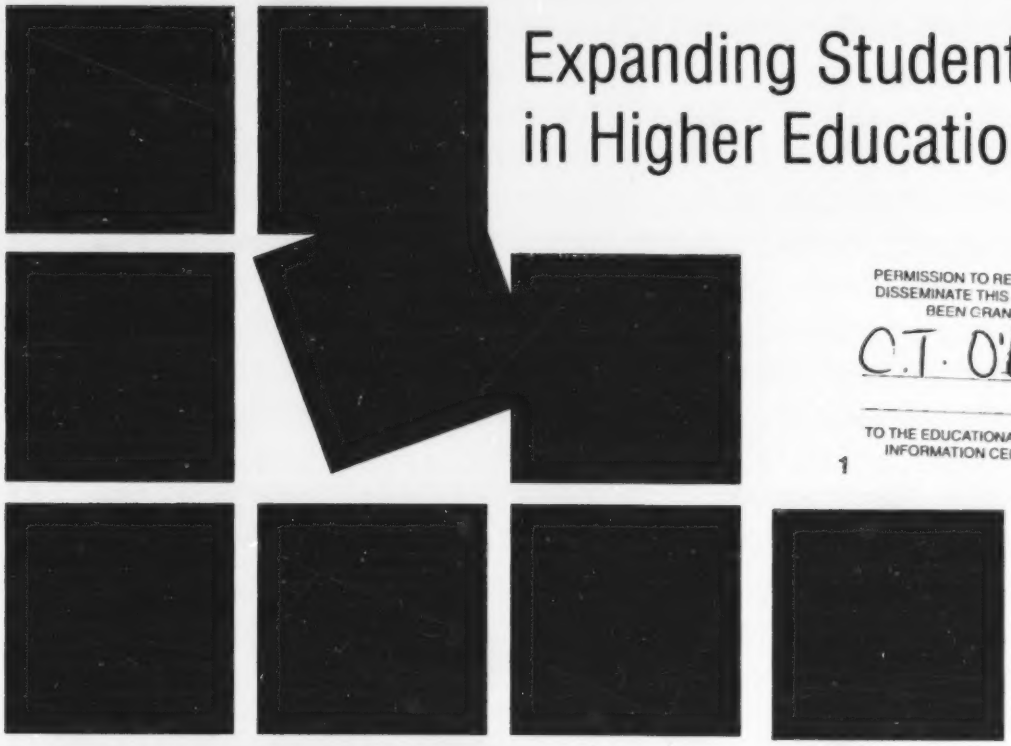

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August 2002

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preface

This report is the latest in a series of reports and papers published under the aegis of the Institute for Higher Education Policy's *New Millennium Project on Higher Education Costs, Pricing, and Productivity*. Sponsored by the Institute for Higher Education Policy, the Ford Foundation, and The Education Resources Institute (TERI), the Project is a multi-year effort to improve understanding and facilitate reform of the complex system for financing higher education.

Given the upcoming reauthorization of the Higher Education Act, the goals and effectiveness of federal Title IV student aid programs once again have come to the forefront of higher education policy debate. Particularly important is the role of federal student aid in promoting access, choice, and affordability despite rising college tuitions and increasing numbers of disadvantaged students who desire to enroll in postsecondary education. Within this context, we felt it was important to reexamine the issue of college choice, in part to lay the groundwork for a discussion of the appropriate goals for federal student aid and the effectiveness of federal aid programs in meeting those goals. This report builds upon a prior report in this series, *State of Diffusion*, which outlined the various purposes of student aid. Other reports and papers published under the New Millennium Project have examined such issues as the public and private benefits of higher education, changes in tuition policies, higher education cost measurement, and the effects of federal tax credits.

The report was authored by Alisa Federico Cunningham, Director of Research, who would like to thank her colleagues at the Institute. Melissa Clinedinst, Jamie Merisotis, Christina Redmond, Jessica Shedd, Jane Wellman, and Tom Wolanin provided helpful comments, ideas, and substantive feedback at various stages in the writing of this report. In addition, Loretta Hardge and Deanna High contributed greatly to the editing, framing, and production of the report. The author acknowledges the contributions of these individuals to this report and recognizes that they are not responsible for any errors of omission or interpretation contained herein.

executive summary

Public policy supporting higher education is largely framed around the idea of access—students with the desire and ability to go to college should be able to attend some type of postsecondary institution. While this focus on access to higher education persists at the federal and state levels, there is increasing interest in an important and related issue: access to what?

Historically, the ability of qualified, motivated students to enroll in some type of postsecondary institution and to pick a school has received varying levels of policymaker support. Discussions about college choice are increasingly common, even if the term "choice" is not used. For example, the apparent inability of financial aid (especially grants) to match the pace of rising tuition is central to discussions about student choice, since financial factors routinely constrain student choices. Similarly, debates about affirmative admissions in higher education are intertwined with the idea that a qualified student should be able to pick the college or university of his or her choice without race being a fundamental determinant of admission or denial. Further adding to the interest in choice at a policy level are reports that prominent new approaches to college financing—such as the federal HOPE tax credits, or the growing number of state merit-based financial aid programs—appear to have more influence on where students go to college than on whether they go at all.

Compounding policy discussion about college choice is that the word "choice" has different meanings in the policy context. At the K-12 level, for example, "choice" has come to mean the ability of parents to send their children to a school that they choose, in many cases through the use of vouchers to reduce the price differential between private, tuition-based schools and free public schools. However, in higher education, which universally relies on tuition whether the institution is public or private, promoting college choice has been a widely supported goal of federal, need-based financial aid programs (such as Pell Grants) since at least the 1970s. The goal of choice is explicitly encouraged by inclusion of the price of college in the federal need analysis formula, in which the level of student "need" increases if a student chooses an institution with a higher price of attendance, all else being equal.

Given the ongoing interest in college choice, this report takes a fresh look and revisits what college choice means and how it works. Exploring in some detail the various definitions used to describe choice, the report reveals what is known about the factors that influence students' decisions, and the current "status" of choice. Throughout the report, the analyses focus on choice in relation to federal, need-based financial aid policy.

Key Findings

Higher education policy discussion about choice have evolved from focusing on whether students have a choice of public versus private institutions to examining whether students can choose between a two-year college, a for-profit institution, or a four-year institution. The following key facts represent what is known about the current status of choice in U.S. postsecondary education:

- In 1999-2000, 62 percent of all first-year undergraduates were enrolled at public two-year institutions; 19 percent attended public four-year institutions, 9 percent attended private not-for-profit four-year institutions, 8 percent attended proprietary schools, and the rest (2 percent) attended other types of institutions.
- First-year undergraduates with non-traditional characteristics were more likely to attend lower-priced, two-year institutions and proprietary institutions than were traditional freshmen. For example, 75 percent of students 24 years or older were enrolled at public two-year institutions, compared to 41 percent of students 18 years or younger.
- The lowest-income dependent students were more likely to attend public two-year institutions (55 percent) and proprietary institutions (8 percent) than the highest-income dependent students (45 and 2 percent, respectively).
- Black and Hispanic students were more likely to attend proprietary schools than were students of other races/ethnicities, 12 percent for Black and Hispanic students compared to 6 percent for white students.

The data reveal that patterns of enrollment have changed over the period 1989-90 to 1999-2000, suggesting a movement toward lower-priced institutions (especially community colleges) for many groups of students. The trends break down differently for different types of freshmen.

- Among traditional freshmen, the proportion of low-income freshmen decreased at most types of four-year institutions, but increased at public two-year institutions. On the other hand, higher-income students decreased at less selective four-year schools and proprietary institutions, but increased at both public two-year institutions and more selective, PhD four-year institutions.
- Among non-traditional freshmen, the proportion enrolled at proprietary schools decreased, but increased at public two-year institutions—especially among students from the lower income categories.

The report also examines whether aid is being targeted in a way that would provide choice, given the framework of federal need analysis. This approach assumes that if aid is promoting choice, students attending more expensive institutions would be more likely to receive financial aid, and to receive higher average amounts, within the same level of family income. This approach also assumes that financial aid is helping to promote choice if the costs of choosing a more expensive institution are reasonable. In fact:

- At more expensive institutions, higher proportions of full-time, full-year dependent undergraduates received aid from any source, across all family income categories.
- The percentages of students receiving institutional aid and loan aid were tied more to the type of institution than to family income, suggesting that these types of financial aid were promoting choice more than federal or state aid, or grants.
- The choice of a more expensive institution is relatively more costly for students from low-income backgrounds than for students with high-income backgrounds.
- In 1999-2000, a substantial proportion of federal need-based financial aid (from 40 percent to more than 70 percent) for all students, depending on definition of choice, went toward promoting choice. However, the proportion varied even more by family income, with increasing percentages of aid going to promote choice in the higher income categories.

Conclusions

This report suggests that there are several key questions to consider in future policy discussions of college choice:

- **Why are certain groups of students less likely to attend specific categories of institutions?** Taken altogether, the findings reveal declining choice for certain types of students, apparently confirming perceptions that many students are choosing lower-priced institutions due to increasing tuition levels. However, enrollment patterns alone are not enough to definitively conclude that disadvantaged students' barriers to choice are solely monetary. A longitudinal perspective involving the entire choice process suggests that the reality is complex, and that monetary factors are important but not alone in influencing educational opportunity.

- **How should choice be defined for public policy purposes?** The specific meaning of college choice depends on one's perspective. In some cases, "choice" is a codeword for specific policy goals; in this sense, choice may mean not just the enabling of options for students, but also may connote ideas about institutional quality and equalizing tuition levels across sectors. Sharpening the definition of choice and clarifying the role of specific forms of financial aid in promoting choice will enable better targeted public policy.

- **Is federal need-based aid currently awarded in a way that reflects the goal of promoting choice?** The findings present a mixed picture. Conclusions depend upon the definition of choice and the income background of the student.

- **Should choice be a goal of federal aid policy?** The existing framework defines financial "need" in a way that is sensitive to the price of attendance, in order to support the goal of choice. However, this means that students can be defined as "needy" based upon the price of the institution they choose, rather than as a result of disadvantaged economic circumstances. What is the appropriate balance?

- **What is the likely consequence of offering more, or less, choice to students?** Not only do public policies change over time, but also the composition of students attending postsecondary education institutions and the structure of higher education itself shift in response to competitive pressures. Given the ongoing patterns of tuition increases—with growing gaps between two-year and four-year tuitions, and public and private tuitions—choice may have eroded even without changes in federal policy. This deserves further examination and analysis.

introduction

Over the past few decades, college enrollment has been increasing despite rising tuition levels and the apparent inability of financial aid (especially grants) to match the pace of tuition. Observers have tried to understand the incongruity between increasing enrollment and increasing net prices by focusing on the issue of *where* students are enrolling. But the postsecondary education system has become very differentiated—ranging from open admissions, two-year schools to highly selective, restricted admissions research universities—and the differences are reflected in wide variations in tuition and enrollment patterns. Low-income students, for example, appear to be more sensitive than middle- or upper-income students to college prices (Heller 1997), and disadvantaged students are less likely to enroll in selective private institutions or even four-year institutions. Thus, it may be possible that the college financing system is effective in making some form of postsecondary education widely accessible, but is less successful in matching access to a suitable postsecondary experience with the abilities and desires of some groups of students.

In practice, the process of choosing where to attend college is highly complicated, and issues of tuition and financial aid are not the only ones that influence students' decisions. College choices also are constrained by non-monetary factors such as subject of study, institutional admissions practices, family or work responsibilities, and family/societal expectations (Choy and Ottinger 1998). In fact, college enrollment patterns depend on self-selection processes that take into account all of these factors (McDonough 1997), which narrow the range of institutions that a student considers. This process must be kept in mind when enrollment patterns are used to assess how effectively the college financing system provides choice. Nevertheless, these patterns (and how they have changed over time) are worthy of examination since the nature of an institution attended—especially the level of the institution—affects the extent of the student's education as well as his or her eventual social and economic return (Hearn 1991; McDonough 1997).

The issue of college choice continues to be raised in higher education policy circles in a variety of contexts. In recent years, for example, some researchers have asserted that low-income students are increasingly becoming concentrated in lower-priced, two-year institutions, reflecting a growing stratification of postsecondary education by socioeconomic status (McPherson and Schapiro 1998). Others have suggested that new student aid initiatives, such as the federal HOPE tax credits, have served to encourage choice rather than access to postsecondary education (Wolanin 2001). Given the continuing salience of the issue, it makes sense to reexamine the concept of college choice within the context of public policy.

This report takes a fresh look at college choice from several perspectives—the various definitions used to describe choice, what is known about the factors that influence students' decisions, and the current "status" of choice. The report is divided into corresponding sections. The first section presents different definitions of "choice" as the term has come to be used in the policy context,

and explains how the definitions have expanded or changed over time. This section lays out a framework for understanding college choice in a policy context. Next, the report explores the choice process and the factors that influence each step of the process, highlighting some of the substantial research that has been conducted in the area. In the last section, the report focuses on the outcomes of college choice decisions by reexamining previous research using more recent data. Data are drawn primarily from the National Postsecondary Student Aid Study (NPSAS), a U.S. Department of Education dataset that captures information on undergraduate enrollment, demographic characteristics, financial aid patterns, and other characteristics at one point in time. This section highlights the current status of choice as reflected in the distribution of students by institutional type.

Throughout the report, the analyses focus on choice in relation to federal student aid policy, while acknowledging the importance of other policy instruments such as state financial aid and early intervention programs. The report offers a framework for future conversations about college choice and the role of federal student aid in promoting choice.

the concept of choice

The concept of choice has been defined in different ways, depending on the stakeholder's perspective—students, colleges and universities, federal and state governments, and others. Within the public policy context, the definition of choice has specific ramifications when seen as a goal of federal student aid policy. In addition, policy debates regarding college choice tend to shift over time, reflecting new concerns and goals.

Defining choice

The concept of educational "choice" has been used in many contexts, from elementary and secondary education to undergraduate education and beyond. At the K-12 level, public policy debates about choice tend to revolve around proposals of public funding for school voucher programs that enable parents to enroll their children in private or parochial schools or, more recently, the choice of alternatives within the public school framework, such as charter schools and magnet schools. Public policy debates about choice at the postsecondary education level differ, stemming largely from the fundamental distinction that K-12 education is compulsory, whereas all of postsecondary education represents "choice" to some extent.

At the broadest, most abstract level, the concept of *college* choice involves a student's ability to attend the college or university most suited to his or her desires and academic abilities. Researchers routinely define "choice" as the end result of a process, in which students evaluate their options and choose among them. In fact, significant theoretical groundwork exists that describes the college choice process from the perspective of an individual student, usually in terms of multiple stages (see, for example, Manski and Wise 1983). Briefly, a student first decides whether to attend college. In the second phase—search and application—students seek information about colleges and formulate a choice set, a range of colleges to which they apply. In the final selection phase, students evaluate their choice sets (depending on where they are admitted) and make selection decisions. (The choice process is described in more detail in the following section.)

For the purposes of government policymaking, *choice* is frequently defined in relation to *access*. Both are aspects of educational opportunity. In the abstract, "access" can be defined as the ability to attend college; providing access to a student means that he *can* attend college. Access can be more specifically defined in a number of ways, from the ability to enroll in any form of postsecondary education at any time, to the ability to enroll in a four-year college immediately after high school (see Institute for Higher Education Policy 1999b). Choice raises the question: *access to what?* Thus, providing choice to a student goes beyond access, to mean that a student can attend an institution appropriate for his or her desires and academic abilities. What that means specifically depends on which definition of access is at work, and in fact, the two concepts—access and choice—are integrally linked.[1]

[1] Another perspective related to the definition of choice is that of colleges and universities, where choice may be perceived in light of institutions' desires for diverse student bodies, or within the context of increased marketing efforts. Much of the financial aid awarded to students by higher education institutions is offered to encourage a specific "mix" of students, or to allow students from specific backgrounds to choose to attend a particular institution.

In order to judge the effectiveness of government policy in encouraging choice, the concept needs to be operationally defined, within the public policy context. Specifically, college choice often refers to outcomes—i.e., the pattern of enrollment at various types of institutions. Although such outcomes may, at first glance, appear to be a function of the final stage of the student choice process (selection), they are actually a cumulative result of the process and are influenced at many points along the path. This influence is important to keep in mind when using outcomes data to draw conclusions about specific policies.

In practical terms, the focus on outcomes varies based on the specific groups of institutions examined. Examining choice through outcomes depends largely on the definition of the "institution of basic access," or the type of institution that virtually guarantees access to postsecondary education. For example, some argue that public two-year institutions, because they receive substantial (mostly state) subsidies to keep tuition low and provide a wide range of academic and vocational programs, should be the schools of basic access; others argue for public four-year institutions, since postsecondary education should be primarily academic and a postsecondary education should result in a four-year degree. In examining outcomes, institutions of choice would be the schools that are somehow higher/better/more expensive than the institutions of basic access. Distinguishing between access and choice implies that providing access to the lowest-priced institution does not necessarily match students with institutions that best suit their needs and abilities.

Choice and federal aid policy

Various types of public policies aim to encourage college choice. These policies rely on a wide range of approaches from early intervention programs and early awareness activities, to tax exemptions and benefits to private institutions. In addition, promoting college choice is a specific goal of federal financial aid, especially need-based aid programs. Since the 1970s, one goal of federal need-based aid has been to provide choice for the individual student recipient.[2] The price of college was therefore included in the federal need analysis formula, which is used to determine the expected family contribution (EFC) and the amount of federal need-based aid a student may receive, so that aid programs could address choice as well as access.

Both access and choice are explicit goals of federal need-based aid policies. Need-based student aid attempts to promote access in general by reducing students' net price of attendance. Aid attempts to foster choice in particular by taking into account the variation in price of attendance at different types of postsecondary institutions. This is accomplished primarily through a feature of the federal need analysis formula, in which the level of student "need" increases as a student' s price of attendance increases, all other factors equal.[3]

To an extent, access and choice have become code words in controversies over federal student aid programs, related to who receives aid, what type of aid is received by certain students, and which institutions are involved. Of course, access and choice cannot be completely separated, as aid may

[2] This goal is intertwined with the decision to use student aid as a portable mechanism for the distribution of resources, rather than providing federal dollars directly to institutions.

[3] Note that these definitions of access and choice are distinct from the concept of affordability. Affordability refers to whether the money students and their families actually pay to attend college is within their reach (Institute for Higher Education Policy 1999). When analyzing how financial aid reduces the total price of attendance faced by students, it is defined differently based upon the goal of aid examined; thus, access (and choice) may be analyzed by looking at price less all financial aid received, while price minus all grants is a better measure for affordability (Cost Commission 1998). This is based on the premise that loans (and work-study) are equal to grants in meeting immediate financial need, and therefore enable access in the short-term; in the long run, however, loans do not reduce the net price to the student because they must be repaid (or, in the case of work-study, must be earned through work).

affect both simultaneously—it may change enrollment patterns and encourage students to enroll who otherwise would not attend college. Nonetheless, a trade-off exists between using a limited amount of need-based aid primarily to ensure access (through emphasizing a student's economic background) or to promote choice (by allowing price of attendance to influence the amount of a student's need). The relative emphasis on access and choice can be altered by changing aspects of the federal need analysis methodology (CBO 1991).[4]

From the perspective of federal need-based student aid policy, more expensive institutions become the "schools of choice." Thus, analyses of outcomes tend to focus on enrollment of different groups of students at more expensive schools versus less expensive schools. Operationally, outcomes may refer to attendance at private institutions over public institutions,[5] four-year institutions over two-year institutions, selective admissions institutions over non-selective, open admission schools, and high-spending schools over lower spending institutions, among other definitions.

Of course, as mentioned above, choice of college depends on many factors, and a student may not necessarily prefer a more expensive school to a lower-priced institution. Within this context, federal student aid aims to enable students to choose more expensive institutions *if they are accepted by those institutions and desire to attend.* In examining outcomes, then, ideally the effect of financial aid on choice ought to be isolated from the effects of other factors. Yet in reality, academic and other non-monetary factors are too closely intertwined with monetary factors to disentangle completely.

Policy changes over time

The context of public policy relative to college choice has changed over time. Although this section focuses specifically on federal financial aid policy, it is important to keep in mind that simultaneous changes have occurred in state policy, as well, focusing on other factors in the choice process. For example, increasing federal and state-level attention is being directed to early intervention efforts to equip students to choose. In addition, the options that influence student choice are changing, such as advances in technology related to distance learning, making proximity less relevant for a significant proportion of the student population.

In the 1970s, commitment to choice as a goal of federal aid was made explicit in statements that federal need-based grants would "not only guarantee low-income students access to public institutions, but also provide a modest level of choice between public and private institutions" (ACSFA 2001, 2). This reflected the reality that in those early years, choice was conceived in terms of the ability to attend private, high-priced institutions. These institutions were perceived to offer substantial advantages, such as personalized attention and better success in graduating students, and to contribute to diversity within the higher education sector.[6] At that time, there was concern about the growing tuition gap between the public and private sectors, suggestions of future financial difficulties, and fears that the private sector was in jeopardy, as its proportion of enrollment continued to decrease (Breneman and Finn 1978).

Reports such as that by the Carnegie Commission on Higher Education, which advocated raising

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[4] For example, the proportion of the total price of attendance that is counted can be changed.

[5] The context of private versus public institutions was originally conceptualized in terms of four-year, not-for-profit institutions. However, the growth of the private for-profit sector has blurred the public/private distinction within the choice framework. It is useful to keep in mind that private for-profit institutions tend to be more expensive than public institutions, especially public two-year institutions; thus, in some analyses, private for-profit institutions are considered along with private not-for-profit institutions due to their higher average prices. In other analyses, private for-profit institutions are grouped with public two-year institutions because both sets of institutions tend to offer certificates and associate's degrees rather than bachelor's degrees or higher.

[6] As mentioned in the previous footnote, "private" institutions generally meant private not-for-profit institutions.

public tuition to narrow the gap, were accompanied by political battles that deterred efforts to address the issue.[7] As a result, federal government attempts to help the private sector were piecemeal and generally came in the form of need-based, student aid strategies to encourage or equalize choice (Gladieux and Wolanin 1978; Wolanin 1998).[8] Several key provisions were enacted in 1972:

- The Basic Equal Opportunity Grant (BEOG, now Pell Grant) half-cost rule, in which grants could not exceed one-half the cost of attendance;
- The campus-based funding trigger, which required campus-based programs to be funded before the basic grants could become operational; and
- The State Student Incentive Grant (SSIG, now LEAP) program, which encouraged the development of state scholarship programs and had specific provisions encouraging scholarships for students in the private sector as well as in public institutions.

During the 1980s, the private sector fiercely fought to keep these provisions despite a general retrenchment in federal student aid policy (Wolanin 1998). Meanwhile, this decade also saw the beginning of a shift in federal student aid policy toward loans instead of grants. Combined with widening tuition gaps and the nature of the need analysis formula—in which one student' s defined need may surpass that of another solely due to attendance at a higher-priced institution rather than a lower ability to pay—this shift has had implications for the ability of different forms of financial aid to encourage choice. For low-income students, need-based federal grant aid such as Pell Grants became less likely to encourage choice, as the grants covered a declining proportion of the average price of attending a four-year institution (especially selective and/or private institutions), and therefore were unlikely to encourage enrollment shifts. On the other hand, need-based aid to higher-income students, especially through loan programs, was more likely to subsidize choice rather than access.

By the early 1990s, providing choice was no longer a specific mission of the Pell Grant program. In addition, the campus-based trigger was repealed in 1986, and the half-cost provision was repealed in 1992 (Wolanin 1998). Choice has remained a goal of the larger student aid system, nonetheless, and the federal need analysis formula continues to include price of attendance as one of its elements. As price differentials widen between types of institutions, for example, increasing numbers of students have turned to federal student loans to help pay for higher tuitions and living expenses. Although the federal tax credits enacted in 1997 are still too new for a comprehensive evaluation of their effects, observers believe that students attending institutions with higher prices of attendance benefit most from the credits (Wolanin 2001); the credits therefore may be enabling middle-income students to continue to enroll in more expensive institutions than they otherwise might be able to afford, or at the very least may be influencing the perception of institutional alternatives. In a sense, the goal of encouraging college choice has been left to other forms of financial aid.

In parallel with the shift in financial aid goals, changes in the implicit definition of choice used by

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[7] The Carnegie Commission on Higher Education (1973) suggested narrowing the tuition gap by increasing public tuition levels a bit, while offsetting the higher tuition with increased availability of aid for lower-income students.

[8] Federal involvement with private institutions also came in the form of direct payments to institutions (for example, for research and development contracts) and tax provisions regarding donations to non-profit institutions (Breneman and Finn 1978). State policy has been more explicit in its support of private colleges, and state student aid programs are generally open to students attending public or private institutions (Gladieux and Wolanin 1978). In fact, the Carnegie Commission on Higher Education (1973) suggested that state governments take into account the impact of their decisions on the private sector, and recommended the use of SSIG/LEAP incentives to increase state aid to students in both the public and private sectors, while addressing the tuition gap.

policymakers were also occurring. In the early 1970s, choice tended to be conceptualized in terms of the ability to attend private, mostly selective institutions. For example, the Carnegie Commission on Higher Education (1973) framed choice in terms of private institutions, which it stated had the same social and economic benefits as public institutions—thereby offering a justification for public dollars to have the goal of choice. In more recent years, the term "choice" has been increasingly applied to the ability of disadvantaged students to attend any four-year institution, public or private.[9] In part, this change has stemmed from a growing concern that low-income students are being concentrated in two-year institutions. It also has been influenced by data consistently showing higher earnings for bachelor's degree recipients than for those with some college (Carnevale and Rose 1998) and by recent research suggesting that the personal benefits (in terms of future income) of attending highly selective institutions have increased over time (Hoxby 1998). Ultimately, this shift in definition may signal a change in the theoretical basis of choice policy.

A framework for understanding choice

Clearly, "college choice" can mean different things to different people, and these meanings have changed over time. To evaluate public policy, it is important to have measurable indicators of effectiveness; yet in the case of "choice," outcome measures result from a cumulative, complicated process. In thinking about public policy and college choice, it is helpful to keep in mind the multiple aspects of the concept. Toward this end, Figure One summarizes a framework for understanding the concept of choice, from various perspectives.

From the student perspective, several types of factors influence the choice process:

- *Institutional characteristics*, such as the location of the school, the spaces available, and the programs offered;
- *Academic factors*, including a student's level of academic preparation as well as the admissions criteria of the institution; and
- *Monetary factors*, such as the tuition and fee levels, financial aid offered, and the students' and families' ability to pay.[10]

These factors influence a student's choice at various stages in the process, from the development of aspirations to go to college, to the construction of a "choice set" (a group of institutions to which the student applies), to the selection of the institution at which the student will enroll.

The public policy perspective, vested in society's notion that some degree of choice is desirable, aims to encourage student choice. The options for public policy range along a continuum of degrees of choice:

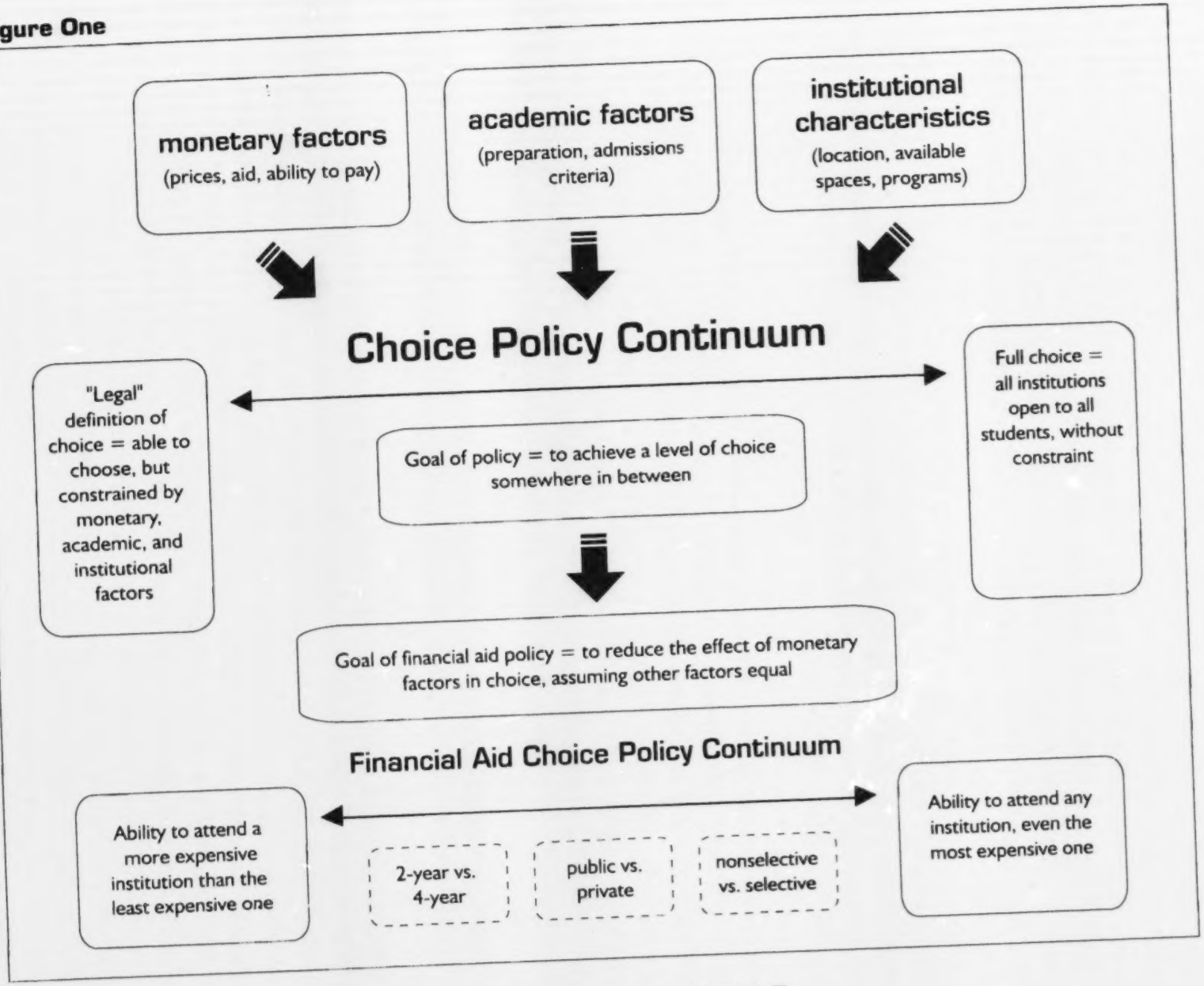
- At one end is the "legal" definition of choice, in which students are not by law excluded from choosing any institution, although in practice they are constrained by the three groups of factors above.
- At the other extreme is the definition of "full choice," in which all institutions would be open to all students equally. The three groups of factors would no longer restrict students' choices or perceptions of available choice sets.

The first definition is too limited; the second, too expansive. Public policies generally aim at a "balance" somewhere in the middle of the continuum. Specifically, federal need-based student aid policy (through need analysis) attempts to neutralize or reduce the influence of monetary factors on a student's choice decision. Put another way, if a

[9] Interestingly, there has been a similar shift in public policy debate about choice in elementary and secondary education, in which the debate about public funding for private school attendance has been recast to an extent to focus on choice among public school alternatives

[10] These factors are not truly separate from each other; in particular, a student's socioeconomic background is integrally linked with academic preparation (see, for example, Berkner and Chavez 1997).

Figure One


monetary factors
(prices, aid, ability to pay)
academic factors
(preparation, admissions criteria)
institutional characteristics
(location, available spaces, programs)
Choice Policy Continuum
"Legal" definition of choice = able to choose, but constrained by monetary, academic, and institutional factors
Full choice = all institutions open to all students, without constraint
Goal of policy = to achieve a level of choice somewhere in between
Goal of financial aid policy = to reduce the effect of monetary factors in choice, assuming other factors equal
Financial Aid Choice Policy Continuum
Ability to attend a more expensive institution than the least expensive one
2-year vs. 4-year
public vs. private
nonselective vs. selective
Ability to attend any institution, even the most expensive one

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student is academically qualified for a particular institution and the institution has the necessary characteristics desired, then the student should be able to attend that institution; monetary factors should not be a barrier to that choice.

In practice, federal need-based aid policy generally tries to enhance choice without necessarily equalizing it. The issue becomes what amount of price difference between institutional alternatives is reasonable to allow the student some level of choice. Federal aid policy regarding choice can be viewed as ranging along a sub-continuum, which addresses the question of "what kind of choice does financial aid enable?" The various goals for choice are integrally linked to definitions of access, another goal of need-based financial aid, and the assumption is that non-monetary factors (academic and institutional) are met.

- Assuming access is defined as the ability to attend a (any) postsecondary institution, then the lowest-priced institution would be the institution of basic access from a need-based financial aid perspective. Therefore, choice would be defined as the ability to attend any institution more expensive than the least expensive one. This definition is the most limited, requiring the least amount of financial aid.

- If access is defined as the ability to attend a (any) four-year institution, then the lowest-priced four-year institution would be the institution of basic access from a need-based financial aid perspective. Therefore, choice would be defined as the ability to attend any four-year institution more expensive than the least expensive four-year institution.

- At the other extreme, access might be defined as the ability to attend a (four-year) institution "matched" to a student's abilities, in terms of quality and selectivity. In this case, the institution of basic access would be the lowest-priced (four-year) institution that admits a particular student. And, choice might be defined as the ability to attend any institution that admits the student, even the most expensive (most selective) one. This definition would require the most financial aid.

In the abstract, one can attempt to measure the effects of financial aid on choice by looking at the distribution of enrollment, given the actual prices of different types of institutions and controlling for non-monetary factors. Holding academic and institutional factors equal, financial aid would be expected to somewhat equalize the distribution of students from different income backgrounds by institutional type. For more limited definitions of choice, this might mean examining two-year versus four-year institutions; for the most expansive definitions of choice, this might mean looking at non-selective versus highly selective institutions.

In practice, however, outcome measures frequently cannot fully control non-monetary factors (especially given that academic factors are integrally linked to monetary factors throughout the choice process). Although the outcomes data may suggest that choice has not been fully realized (the "status" of choice), the data do not clearly establish whether the "cause" is due to financial aid, or non-monetary factors, or some combination of both. The timing of causal influences, i.e., the point in the choice process at which factors have an impact, also cannot be determined from outcomes data.

Longitudinal analyses nonetheless can be used to explore the reasons why students from certain backgrounds may not be enrolling at certain groups of institutions at the same rates as other students. Understanding how students make enrollment decisions (through the choice process) can help policymakers decide how and where to intervene to improve progress toward the goal of "choice," however defined. In combination with outcome measures, the analysis can point to progress as well as to areas of concern. The remainder of this report surveys both types of research on college choice: first, a summary of the choice process

literature and the factors influencing the process; second, a look at updated enrollment outcomes, using several analytic frameworks.

Choice is not a static concept. Definitions and measures of choice change over time, and are affected by broader changes within the postsecondary education industry and the economy as a whole. For example, the framework presented above does not fully take into account distance learning as an emerging dimension of postsecondary education, yet such technologies have certainly had an impact on the educational opportunities and preferences of students. In a related issue, the private, for-profit sector in all of its various forms does not fit neatly into this framework, especially regarding outcome measures, yet the growth of the sector makes it important to include in any analysis. Finally, much of federal choice policy was formulated in a time when "traditional" students—those enrolling straight from high school, attending on a full-time basis, and depending on their parents for finances—made up the majority of college students. Today, the overwhelming majority of students have at least one non-traditional characteristic (NCES 2002b), and enrolled students reflect a diversity of goals, interests, and preferences.

the college choice process

Over the years, substantial research has been conducted in the area of college choice from the perspective of students, especially regarding the factors influencing student enrollment behavior.[11] In general, this body of research is consistent on the choice process and the factors that influence each stage.

Stages of the choice process

Many researchers have described choosing a college or university as a multiple-stage process. The process can be a lengthy one—even extending back to the earliest influences on college aspiration. Each student then passes through a series of stages in which he narrows his options to a single set of institutions before final selection. The process also can be described as a sequence of decisions affecting postsecondary education choices: application to college, admission, financial aid offers, the choice of school versus work, and persistence in college. In focusing on the choice to enroll at a specific college, a student's institutional alternatives frequently are predetermined—a result of prior student applications and college admission decisions. In fact, individual application decisions may be more important than college admission decisions in determining attendance, which suggests that policymakers must try to influence the process at an early stage in order to effect change (Manski and Wise 1983).

For this report, a three-stage model of the choice process is most useful. The model by Hossler and Gallagher (1987) describes the stages as: 1) predisposition—reviewing postsecondary opportunities and forming college aspirations; 2) search—searching for information about possible institutions and formulating a choice set, and group of institutions to which they apply; and 3) choice—selecting an institution from among the choice set to attend. Each of these stages is associated with a specific age group—for example, predisposition in grades 7 to 9, search in grades 10 to 12, and choice in grades 11 to 12—yet the three stages interact with each other in complex ways (Cabrera and La Nasa 2000).

Together, studies of the choice process have found that different kinds of factors—student and institutional, academic and nonacademic—influence the choice process at various steps along the way.

- **Predisposition (aspiration)**. In this early stage, student background characteristics (income, ability, parent attitudes) and school activities affect a student's decision about whether to continue on toward college (Hossler and Gallagher 1987). Parental encouragement has emerged as the most influential variable, and intervenes between socioeconomic status (SES), academic ability, and aspirations. Other influential factors include race, family size, parents' education levels, family income, academic

[11] Different types of data are useful for different purposes. Cross-sectional data includes only individuals who actually enrolled in postsecondary education, and therefore can address the reasons students chose specific institutions but not the reasons students chose to enroll or not enroll in general. Longitudinal data, on the other hand, can be used to compare the enrollment rates of groups of students with different background characteristics at certain types of institutions, with the implication that groups with similar rates of enrollment have similar levels of access to a particular group of institutions.

aptitude and achievement, self-esteem, the aspirations of peers, high school and neighborhood socioeconomic status, high school curriculum, and the perception of economic benefits of college (Paulsen 1990).

- **Search and application**. In this phase, students decide upon a "choice set," a group of institutions that can be characterized by certain attributes such as selectivity, cost, proximity, control, level, and size. Although many institutions are eliminated from consideration at this phase, it has received the least research attention. Some differences in the timing and the nature of college searches have been found by race, gender, and academic aptitude. For example, students with higher aptitudes start thinking about college earlier and consider a larger number of schools (Paulsen 1990). In addition, economically disadvantaged students appear to be less comprehensive in their searches and rely more on high school counselors for advice (Hossler and Gallagher 1987). Institutional characteristics are important considerations, especially programs, quality, cost, and location, but the priorities given to each factor vary. Low-income students are more likely than middle- or upper-income students to rate financial assistance as important. Students with parents who have higher levels of educational attainment are more likely to emphasize programs and academic standards and less likely to show concern about costs. Higher academic ability students are more concerned about programs and academic standards, are aware of net price rather than just price, and have broader geographic limits (Paulsen 1990). (Table One.)
- **Choice (selection)**. In this phase, individual background characteristics continue to play a role in influencing students' evaluation of the alternative institutions. However, the attributes of each college, offers of financial aid, and student preferences appear to be important as well (Hossler and Gallagher 1987). Research has frequently examined the institutional attributes that distinguish matriculants from non-matriculants at a particular institution, finding that the attributes that most often determine where students decide to enroll are cost, financial aid, programs, location, quality,

Table One: Interaction of selected student and institutional characteristics in the search and application phase of the choice process

	Are more likely to apply/attend institutions that are:				
Students with certain characteristics:	**Highly selective**	**High-cost**	**Farther from home**	**Private**	**Four-year**
Gender (male)	+	-	+	-	n/a
Race (white)	+	-	n/a	n/a	n/a
Parents' Education	+	+	+	+	+
Family Income	+	+	+	+	+
Academic Aptitude	+	+	+	+	+
Academic Achievement	+	+	+	+	n/a
College Prep Courses (yes)	+	+	n/a	n/a	n/a
Aspirations	+	+	+	+	+
Parental Encouragement	n/a	n/a	n/a	n/a	+

+ signifies a positive association • - signifies a negative association • n/a means that no association was reported
Source: Derived from summary in Paulsen 1990, pp. 55-58.

and social atmosphere (Paulsen 1990). At the same time, student and institutional characteristics interact in determining student selection. For example, an institution becomes less attractive to students when tuition and distance from home increase, especially for students at lower income levels and with lower aptitude (Paulsen 1990). Recent data from a cohort of 1988 eighth graders can illustrate some of these interactions. Of the students who enrolled in four-year institutions by 1994, 64 percent indicated that institutional reputation was a very important factor in their decision, 44 percent cited availability of financial aid, and 24 percent said level of college expenses; for the latter, those in the lowest SES and test quartiles had higher percentages (Sanderson et al. 1996). In addition, financial aid offers were associated with students' decisions to attend public and private four-year institutions (Akerhielm et al. 1998).

These three-stage models have been broadly accepted, although the stages can be labeled differently (Paulsen 1990). However, a three-stage process approach is appropriate primarily for research on traditional college-age students (St. John, Paulsen, and Starkey 1996). Less research attention has been focused on non-traditional students, despite an increase in enrollment levels (Paulsen 1990). Non-traditional students, especially those who delay entry into postsecondary education, may respond to different factors and their choice processes may be less linear than those of more traditional students.

Role of monetary factors

Financial factors play a role at each stage of the three-part process (St. John, Paulsen, and Starkey 1996). Through parent savings and aspirations, they affect students' aspirations/predisposition; they affect the search and application phase through assessment of available financial resources; and they affect the selection of a specific college through assessment of the net prices of alternative institutions (the aspect most directly targeted by student aid programs).

Financial factors, however, are not the only variables influencing the process, and may not even be the most important. One study (Manski and Wise 1983) found that students with higher academic skills (measured by class rank and SAT scores), better educated parents, and higher parent incomes were more likely to apply to and attend more expensive colleges as well as colleges with higher average SAT scores. They also found that compared to academic ability and parents' education, parents' income is a relatively unimportant influence on application to college, and may be mitigated by financial aid awards.

There remains a tendency, nonetheless, for lower SES students to enroll in different types of schools than their higher SES counterparts, even after considering academic factors. Non-academic factors (especially SES) still have an effect, and by themselves explained a part of the difference in nature (in terms of selectivity and per-student expenditures) of the postsecondary institutions that high school graduates attend (Hearn 1991). "While an individual's academic achievement is clearly a key determinant of college attendance, the interplay of a student's social class background and the high school's organizational contexts and processes appear central to the question of *where* an individual attends college" (McDonough 1997, 8). Students feel an "entitlement" to a particular kind of collegiate education and are lead to organize their college search around a range of "acceptable" institutions.

It also seems clear that the influence of monetary factors such as financial aid may differ depending on the background characteristics of the student. For example, one study found that BEOG awards to upper- and middle-income youth had little effect on their enrollment patterns, but substantial effect on the patterns of low-income students (Manski and Wise 1983). In addition, it appears that a college becomes

more attractive as the availability of financial aid increases; the effect is reduced for students at higher income levels but enhanced for nonwhites and those of high academic achievement (Paulsen 1990).

Variations with definitions of choice

Despite general consensus on the factors associated with stages of the choice process, their relative strengths may differ, depending on the type of choice examined. For example:

- The influence of certain characteristics varies depending on how enrollment is defined (all postsecondary enrollment as opposed to immediate enrollment at traditional institutions). Specifically, the influences of SES and of being on a high school track appear to decrease when examining the broader definition of enrollment (Hearn 1988). This is likely related to the differences between the choice processes of traditional and non-traditional students.

- Changes in tuition seem to primarily affect two-year college attendance, where tuition increases discourage students from attending college altogether. On the other hand, increasing proximity for two-year colleges both encourages new college students and diverts students from four-year colleges (Rouse 1994).

- Institutional type is associated with the priority given to various factors cited by freshmen as important to their choice decisions. Undergraduates at four-year institutions were more likely to cite reputation than location, price, or the influence of others as their reason for choosing (with students at public institutions more likely to choose location or price than their counterparts at private institutions). Beginning undergraduates at public two-year institutions mentioned location as the reason for choosing their institution more often than any other factors (Choy and Ottinger 1998).

outcomes

the status of choice in a policy context

Much research has been conducted on factors influencing the choice process, focusing on the perspective of students and families. Another component of research examines outcomes in terms of the status of choice. What institutions are students with various characteristics most likely to attend? Examining where students are actually enrolled (outcomes) helps policymakers evaluate government policy interventions. If differential rates of enrollment are found, it suggests that the goal has not yet been accomplished. Findings also may help determine how much more is needed to reach the goal of college choice, however defined.

Each specific conceptualization of choice has implications for measuring outcomes. For example, if access were defined as access to *any* postsecondary institution, then the basic "institution of access" would be the public two-year institution, and choice would reflect a comparison of enrollment patterns at public two-year institutions to enrollment at other institutions, especially four-year institutions. Indicators of choice under other definitions might compare enrollment at public versus private institutions, higher-priced versus lower-priced institutions, or selective versus non-selective institutions.[12] In exploring the role of financial aid (or, specifically, federal need-based aid), outcomes measures often assume that, all else being equal, a student might prefer to attend a more expensive institution over a less expensive institution if he/she could afford to. This assumption accounts for policy efforts that enable a qualified student to attend a more expensive institution if desired.

There are some limitations to outcomes-based analyses, many of which look only at students enrolled in postsecondary institutions at a certain point in time. In addition, the analyses tend to frame differences in terms of enrollment at institutions with varying price levels, which implies that monetary factors are the only forces at work. As mentioned previously, however, individual student preferences and other academic and institutional factors affect enrollment decisions throughout the choice process. Analysis of outcomes only indirectly captures the effect of the factors that narrow the range of institutions considered before the selection decision is made. In other words, most outcomes measures reflect the cumulative influences of a range of factors, and it is difficult to separate out distinct influences.[13] Yet aggregate outcomes are one of the tools used to judge the effectiveness of federal aid programs in meeting their goals. It is best to keep this apparent inconsistency in mind while examining the results.

Another important qualification relates specifically to studies of enrollment at two-year versus four-year institutions. Clearly, some students who begin at two-year institutions later transfer to four-year institutions, yet these movements are not captured in cross-sectional studies of

[12] The ability to "choose" more selective institutions is tied closely to academic qualifications as well as financial ability, perhaps more so than the other definitions.

[13] In particular, there is at least a perceived correlation between institutional quality (selectivity) and price, such that differences in enrollment between higher-priced and lower-priced institutions might also be reflecting academic factors.

enrollment differences. Broadly, outcomes measures reflect the choices of students at a particular point in time, not their future goals or their previous postsecondary experiences.

Despite these caveats, researchers have attempted to investigate the status of choice and the effectiveness of policy through a review of enrollment at different types of institutions by students from varying economic backgrounds. The following sections are based on previous research models, but use original analysis of recent data to update and expand on these models.[14] In some cases, the new analyses are supplemented by previous longitudinal research. Each section examines the status of choice from a slightly different perspective; taken together, these perspectives can help us better understand college choice.

Distribution of students according to institutional type

At the most basic level, status of choice can be examined by looking at the enrollment of students with different backgrounds by institutional type. This analysis assumes that if choice is being fully achieved, the distribution of students with different characteristics will be somewhat equal. Put another way, if low family income, first-generation status, and delayed enrollment characteristics are not barriers to student decisions at some point in the choice process, then students exhibiting these characteristics should be just as likely as their more advantaged counterparts to attend various types of institutions. The first level of analysis comprises this type of outcomes data. Differential rates of enrollment do not necessarily mean that certain students do not have choice, but rather show that certain groups of students are more likely to attend certain types of institutions. The results may provide ground for further exploration—if the goal is equal rates of enrollment for those groups of students.

Overall distribution of first-year undergraduates by institutional type can set the context for differences in enrollment. In 1999-2000, 62 percent of all first-year undergraduates were enrolled at public two-year institutions; 19 percent attended public four-year institutions, 9 percent attended private not-for-profit four-year institutions, 8 percent attended proprietary schools, and the rest (2 percent) attended other types of institutions (NCES, 1999-2000).

Not surprisingly, previous studies have found that distribution of students among types of institutions differed according to student characteristics: certain types of students appear to be more or less likely to attend certain types of institutions. One example is an analysis of 1995-96 data by Choy and Ottinger (1998), which examined student enrollment from two complementary perspectives: the percentage of beginning postsecondary students with specific characteristics who were enrolled at different types of institutions, and the percentage of students with various characteristics enrolled at specific types of institutions. The analysis compared colleges by level (four-year, two-year, and less-than-two-year) and by control (public, private not-for-profit, and private for-profit). Tables Two and Three replicate the analysis for first-year undergraduates using more recent data, with similar conclusions.[15]

In 1999-2000, where freshmen were enrolled was related to whether they had "traditional" or "non-traditional" characteristics. Freshmen can be characterized as non-traditional if they have at least one of the following characteristics: enrolling part time, being financially independent, being a single

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[14] Data are drawn from the National Postsecondary Student Aid Study (NPSAS), for the years 1999-2000 and 1989-1990.

[15] Choy and Ottinger (1998) looked at beginning postsecondary students, while the following analysis examines first-year undergraduates (freshmen), which may include some students who began their postsecondary education in previous years but are still considered first-year students.

Table Two: Percentage distribution of first-year undergraduates according to institutional type, 1999-2000

	Total	Public less than 2-year	Public 2-year	Public 4-year	Private not-for-profit less than 4-year	Private not-for-profit 4-year	Private for profit
Total	*100.0%*	*0.8%*	*62.0%*	*18.9%*	*1.2%*	*9.2%*	*8.0%*
STUDENT CHARACTERISTICS							
Gender							
Male	100.0%	0.7%	61.7%	20.0%	1.2%	9.3%	7.2%
Female	100.0%	0.8%	62.2%	18.0%	1.2%	9.2%	8.7%
Age as of 12/31/99							
18 years or younger	100.0%	0.2%	41.4%	35.8%	1.2%	18.0%	3.4%
19-23 years	100.0%	0.6%	61.0%	20.3%	1.6%	8.3%	8.1%
24 years or older	100.0%	1.2%	75.1%	7.5%	0.9%	4.8%	10.6%
Race-ethnicity							
White, non-Hispanic	100.0%	0.6%	62.3%	20.4%	1.1%	9.5%	6.2%
Black, non-Hispanic	100.0%	1.6%	61.7%	15.5%	1.6%	8.2%	11.5%
Hispanic or Latino	100.0%	0.6%	60.0%	15.5%	1.7%	10.0%	12.4%
Asian/Pacific Islander	100.0%	0.7%	61.0%	21.5%	0.8%	6.9%	9.1%
American Indian/Alaska Native	100.0%	0.4%	74.6%	10.6%	1.2%	7.1%	6.1%
Single parent status							
Single parent	100.0%	1.4%	67.3%	8.3%	1.6%	5.1%	16.4%
Dependency status for financial aid							
Dependent	100.0%	0.4%	51.3%	29.0%	1.4%	13.5%	4.4%
Independent without dependent	100.0%	0.9%	74.7%	7.9%	0.8%	4.5%	11.2%
Independent with dependent	100.0%	1.3%	72.6%	8.0%	1.1%	4.7%	12.4%
Total income by dependency status							
Dependent, less than $30,000	100.0%	0.3%	55.1%	24.8%	1.5%	10.7%	7.6%
Dependent, $30,000 to $69,999	100.0%	0.6%	53.8%	28.8%	1.4%	11.6%	3.9%
Dependent, $70,000 or more	100.0%	0.2%	45.1%	32.7%	1.4%	18.2%	2.4%
Total income by dependency status							
Independent, less than $20,000	100.0%	1.3%	64.9%	8.7%	1.6%	4.9%	18.6%
Independent, $20,000 to $49,999	100.0%	1.1%	77.8%	7.2%	0.7%	3.6%	9.6%
Independent, $50,000 or more	100.0%	0.9%	80.8%	7.9%	0.5%	5.6%	4.4%

Table Two: Percentage distribution of first-year undergraduates according to institutional type, 1999-2000

	Total	Public less than 2-year	Public 2-year	Public 4-year	Private not-for-profit less than 4-year	Private not-for-profit 4-year	Private for profit
Parents' highest education level							
HS or less	100.0%	1.0%	67.3%	14.1%	1.3%	6.3%	10.1%
Some PSE	100.0%	0.7%	63.7%	19.3%	1.1%	7.7%	7.6%
Bachelor's degree	100.0%	0.7%	58.6%	23.6%	1.1%	10.5%	5.6%
Advanced degree	100.0%	0.3%	44.6%	30.1%	1.1%	18.9%	5.0%
Respondent has dependents							
No dependents	100.0%	0.5%	57.3%	23.6%	1.3%	11.2%	6.1%
Has dependents	100.0%	1.3%	72.6%	8.0%	1.1%	4.7%	12.4%
Delayed enrollment into PSE							
No delay	100.0%	0.3%	53.5%	26.4%	1.2%	12.7%	5.8%
Delayed enrollment	100.0%	1.2%	72.1%	10.0%	1.2%	4.8%	10.7%
High school degree							
High school diploma	100.0%	0.7%	60.6%	20.3%	1.2%	9.7%	7.5%
GED/other/none	100.0%	1.3%	73.9%	6.2%	1.6%	4.6%	12.5%
ENROLLMENT, FINANCIAL AID, AND WORK CHARACTERISTICS							
Degree Program							
Certificate	100.0%	3.4%	66.2%	4.0%	1.7%	2.0%	22.7%
Associate's degree	100.0%	0.0%	86.0%	4.9%	1.7%	2.8%	4.6%
Bachelor's degree	100.0%	0.0%	2.1%	64.3%	0.0%	30.9%	2.7%
No undergraduate degree	100.0%	0.0%	83.3%	12.4%	0.1%	3.5%	0.7%
Attendance intensity							
Exclusively full-time	100.0%	1.0%	42.2%	27.7%	1.9%	14.3%	12.9%
Part time or mixed	100.0%	0.5%	81.9%	10.0%	0.5%	4.1%	3.1%

Table Two: Percentage distribution of first-year undergraduates according to institutional type, 1999-2000

	Total	Public less than 2-year	Public 2-year	Public 4-year	Private not-for-profit less than 4-year	Private not-for-profit 4-year	Private for profit
Aid total amount							
No aid	100.0%	0.8%	79.1%	13.5%	0.6%	4.1%	1.9%
Aided	100.0%	0.7%	48.5%	23.0%	1.7%	13.2%	12.8%
Primary role-student or employee							
Student who works	100.0%	0.6%	57.1%	22.2%	1.4%	11.1%	7.5%
Employee who studies	100.0%	0.9%	77.8%	8.8%	0.7%	4.8%	7.1%
Does not work	100.0%	0.8%	46.1%	28.5%	1.6%	13.1%	10.0%
Work intensity while enrolled							
Did not work	100.0%	0.8%	46.1%	28.5%	1.6%	13.1%	10.0%
Worked part-time	100.0%	0.7%	55.9%	23.0%	1.4%	11.7%	7.4%
Worked full-time	100.0%	0.7%	76.5%	9.8%	0.8%	5.0%	7.2%

Note: Details may not add to totals due to rounding. • *Source: NCES 1999-2000, based on Choy and Ottinger 1997*

Table Three: Percentage distribution of first-year undergraduates according to student characteristics, 1999-2000

	Total	Public less than 2-year	Public 2-year	Public 4-year	Private not-for-profit less than 4-year	Private not-for-profit 4-year	Private for-profit
Total	*100.0%*	*100.0%*	*100.0%*	*100.0%*	*100.0%*	*100.0%*	*100.0%*
STUDENT CHARACTERISTICS							
Gender							
Male	44.3%	43.6%	44.1%	46.9%	44.1%	44.5%	39.5%
Female	55.8%	56.5%	56.0%	53.1%	55.9%	55.5%	60.5%
Age as of 12/31/99							
18 years or younger	23.7%	6.0%	15.8%	44.9%	23.2%	46.3%	10.1%
19-23 years	36.5%	29.4%	36.0%	39.4%	48.5%	33.0%	37.1%
24 years or older	39.8%	64.7%	48.2%	15.7%	28.3%	20.7%	52.8%
Race-ethnicity							
White, non-Hispanic	63.9%	50.4%	64.2%	69.0%	56.1%	65.6%	49.6%
Black, non-Hispanic	14.1%	29.9%	14.1%	11.6%	18.4%	12.5%	20.2%
Hispanic or Latino	13.9%	11.0%	13.5%	11.4%	18.8%	15.0%	21.5%
Asian/Pacific Islander	5.3%	5.2%	5.2%	6.0%	3.6%	4.0%	6.0%
American Indian/Alaska Native	1.0%	0.5%	1.1%	0.5%	0.9%	0.7%	0.7%
Single parent status							
Single parent	14.3%	27.6%	15.5%	6.3%	18.1%	7.9%	29.2%
Not single parent	85.7%	72.4%	84.5%	93.7%	81.9%	92.1%	70.8%
Dependency status for financial aid							
Dependent	51.9%	27.3%	43.0%	79.8%	60.5%	76.0%	28.4%
Independent without dependent	17.9%	21.5%	21.6%	7.5%	11.4%	8.7%	25.1%
Independent with dependent	30.2%	51.2%	35.4%	12.8%	28.1%	15.3%	46.5%
Total income by dependency status							
Dependent, less than $30,000	13.5%	6.0%	12.0%	17.7%	17.0%	15.7%	12.7%
Dependent, $30,000 to $69,999	21.7%	16.5%	18.9%	33.1%	24.7%	27.3%	10.5%
Dependent, $70,000 or more	16.7%	4.9%	12.2%	29.0%	18.8%	33.1%	5.1%
Independent, less than $20,000	18.9%	32.2%	19.8%	8.7%	25.1%	10.1%	43.8%
Independent, $20,000 to $49,999	18.1%	27.8%	22.8%	6.9%	9.8%	7.1%	21.7%
Independent: $50,000 or more	11.1%	12.7%	14.4%	4.6%	4.6%	6.7%	6.1%
Parents' highest education level							
HS or less	42.1%	55.1%	46.1%	30.5%	45.1%	28.6%	54.1%
Some PSE	23.4%	21.5%	24.2%	23.1%	21.7%	19.5%	22.6%
Bachelor's degree	20.8%	17.7%	19.8%	25.2%	20.0%	23.7%	14.7%
Advanced degree	13.7%	5.7%	9.9%	21.2%	13.2%	28.1%	8.7%

Table Three: Percentage distribution of first-year undergraduates according to student characteristics, 1999-2000

	Total	Public less than 2-year	Public 2-year	Public 4-year	Private not-for-profit less than 4-year	Private not-for-profit 4-year	Private for-profit
Respondent has dependents							
No dependents	69.8%	48.8%	64.6%	87.2%	71.9%	84.7%	53.5%
Has dependents	30.2%	51.2%	35.4%	12.8%	28.1%	15.3%	46.5%
Delayed enrollment into PSE							
No delay	55.4%	25.6%	48.0%	76.8%	56.5%	76.6%	40.0%
Delayed enrollment	44.6%	74.4%	52.0%	23.2%	43.6%	23.4%	60.0%
High school degree							
High school diploma	90.1%	83.1%	88.2%	96.8%	87.5%	95.0%	84.7%
GED/other/none	9.9%	16.9%	11.8%	3.2%	12.6%	5.0%	15.3%
ENROLLMENT, FINANCIAL AID, AND WORK CHARACTERISTICS							
Degree program							
Certificate	22.0%	99.5%	23.5%	4.7%	30.1%	4.9%	62.4%
Associate's degree	50.9%	0.6%	70.6%	13.3%	69.7%	15.4%	29.4%
Bachelor's degree	23.3%	0.0%	0.8%	79.5%	0.1%	78.3%	7.9%
No undergraduate degree	3.8%	0.0%	5.1%	2.5%	0.1%	1.5%	0.3%
Attendance intensity							
Exclusively full-time	50.3%	64.6%	34.3%	73.7%	79.0%	78.1%	81.1%
Part time or mixed	49.8%	35.4%	65.7%	26.3%	21.0%	21.9%	18.9%
Aid total amount							
No aid	43.9%	46.8%	56.1%	31.5%	21.6%	19.6%	10.2%
Aided	56.1%	53.2%	43.9%	68.5%	78.4%	80.4%	89.8%
Primary role-student or employee							
Student who works	40.2%	31.2%	37.1%	47.4%	47.5%	48.1%	38.2%
Employee who studies	36.2%	43.7%	45.4%	16.9%	21.9%	18.6%	32.2%
Does not work	23.6%	25.1%	17.6%	35.8%	30.6%	33.3%	29.7%
Work intensity while enrolled							
Did not work	23.5%	24.9%	17.4%	35.5%	30.4%	33.2%	29.6%
Worked part-time	35.3%	34.8%	31.8%	43.1%	40.9%	44.5%	32.9%
Worked full-time	41.2%	40.3%	50.8%	21.4%	28.7%	22.2%	37.5%

Note: Details may not add to totals due to rounding. • *Source: NCES 1999-2000, based on Choy and Ottinger 1997*

parent, being older, delaying enrollment, having a GED or no high school diploma, having dependents other than a spouse, and working full time while enrolled (Horn 1996). In general, students with non-traditional characteristics were more likely to attend two-year institutions and proprietary institutions[16] than were traditional freshmen. (Table Two.) For example:

- Older students, independent students, students with dependents, students who delayed enrollment, first-generation students, and students without a high school diploma were more likely to attend public two-year or proprietary schools than their counterparts. For example, 75 percent of students 24 years or older were enrolled at public two-year institutions, compared to 41 percent of students 18 years or younger. Students who worked full-time while enrolled and students who attended on a part time or part year basis were more likely to attend public 2-year institutions.[17]

Other differences also are clear:

- The lowest-income dependent students were more likely to attend public two-year institutions (55 percent) and proprietary institutions (8 percent) than the highest-income dependent students (45 and 2 percent, respectively). A different pattern was found for independent students, where the lowest-income students were more likely to attend proprietary schools, but the highest-income students were more likely to attend public two-year institutions.
- Students who did not receive financial aid in 1999-2000 were more likely than their counterparts who received aid to be attending public two-year institutions, 79 percent compared to 49 percent.
- Black and Hispanic students were more likely to attend proprietary schools than were students of other races/ethnicities, 12 percent for Black and Hispanic students compared to 6 percent for white students.

Conversely, in 1999-2000, different types of institutions tended to serve students with different characteristics. (Table Three) In general, this broke down along the lines of four-year versus less-than-four-year schools:

- Public two-year institutions and proprietary schools tend to serve older students, financially independent students, first generation students, and higher proportions of single parents than four-year schools. However, there were some differences in the types of students served. Proprietary schools enrolled a higher proportion of Black and Hispanic students, as well as students attending on a full-time basis, than public two-year institutions. In addition, public two-year institutions enroll students from a range of income backgrounds, while proprietary schools primarily serve students from a low-income background. Public two-year institutions primarily serve students enrolled in an associate's degree program, while proprietary schools and public less-than-two-year institutions primarily enroll students in certificate programs.
- Public and private not-for-profit four-year institutions tend to serve more traditional first-year students, i.e., younger students, dependent students with middle or upper income backgrounds, students in bachelor' s degree programs, and students attending on a full-time basis. At both types of institutions, the majority of students received financial aid, although the proportion was slightly larger at private not-for-profit four-year institutions.

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[16] Although some proprietary schools are four-year institutions, for the purposes of this analysis they are classified with public two-year institutions because the overwhelming majority of their programs are for certificates or associate's degrees.

[17] Most of the differences found regarding students with non-traditional characteristics, etc. also hold when examining the distribution of students according to the tuition level of the institution they attend. In other words, non-traditional students are more likely to attend less expensive schools.

Table Four: Distribution of freshman enrollment by income quintile across institutional types, 1989-90 and 1999-2000

1999-2000	Lowest quintile	Lower middle	Middle	Upper middle	Highest quintile
Private not-for-profit PhD	2.4%	2.9%	2.6%	3.3%	6.8%
Private not-for-profit non-PhD	5.8%	4.5%	5.6%	5.7%	6.5%
Private not-for-profit 2-year	1.7%	1.3%	1.0%	1.1%	0.9%
All private not-for-profit	*9.9%*	*8.8%*	*9.3%*	*10.1%*	*14.2%*
Private for profit	14.7%	9.9%	7.0%	5.2%	3.2%
All private	*24.6%*	*18.6%*	*16.3%*	*15.3%*	*17.4%*
Public 4-year PhD	8.7%	9.7%	10.0%	11.3%	13.6%
Public 4-year non-PHD	9.6%	7.8%	7.8%	7.8%	7.4%
Public 2-year or less	57.1%	63.9%	66.0%	65.6%	61.6%
All public	*75.4%*	*81.4%*	*83.7%*	*84.7%*	*82.6%*
All 4-year	*26.5%*	*24.9%*	*26.0%*	*28.1%*	*34.4%*
All 2-year/proprietary	*73.5%*	*75.1%*	*74.0%*	*71.9%*	*65.7%*
Total	100.0%	100.0%	100.0%	100.0%	100.0%
1989-90	**Lowest quintile**	**Lower middle**	**Middle**	**Upper middle**	**Highest quintile**
Private not-for-profit PhD	2.7%	2.2%	2.3%	3.1%	4.9%
Private not-for-profit non-PhD	5.7%	4.7%	5.3%	5.9%	7.4%
Private not-for-profit 2-year	2.9%	2.1%	2.5%	2.0%	1.4%
All private not-for-profit	*11.2%*	*9.0%*	*10.1%*	*11.0%*	*13.7%*
Private for profit	27.5%	20.0%	13.5%	9.1%	5.9%
All private	*38.7%*	*29.1%*	*23.6%*	*20.1%*	*19.6%*
Public 4-year PhD	8.0%	8.4%	9.5%	9.8%	11.1%
Public 4-year non-PhD	8.7%	8.3%	8.6%	9.1%	7.8%
Public 2-year or less	44.6%	54.3%	58.3%	60.9%	61.5%
All public	*61.3%*	*70.9%*	*76.4%*	*79.8%*	*80.5%*
All 4-year	*25.1%*	*23.6%*	*25.7%*	*28.0%*	*31.2%*
All 2-year/proprietary	*74.9%*	*76.4%*	*74.3%*	*72.0%*	*68.8%*
Total	100.0%	100.0%	100.0%	100.0%	100.0%
Percentage point change:	**Lowest quintile**	**Lower middle**	**Middle**	**Upper Middle**	**Highest quintile**
Private not-for-profit PhD	-0.3	0.7	0.3	0.2	2.0
Private not-for-profit non-PhD	0.1	-0.2	0.3	-0.2	-1.0
Private not-for-profit 2-year	-1.1	-0.8	-1.5	-0.9	-0.5
All private not-for-profit	*-1.3*	*-0.3*	*-0.8*	*-0.9*	*0.5*
Private for profit	-12.8	-10.2	-6.5	-3.9	-2.7
All private	*-14.1*	*-10.4*	*-7.3*	*-4.8*	*-2.2*
Public 4-year PhD	0.7	1.2	0.5	1.5	2.5
Public 4-year non-PHD	0.9	-0.5	-0.8	-1.3	-0.4
Public 2-year or less	12.5	9.7	7.6	4.7	0.1
All public	*14.1*	*10.5*	*7.3*	*4.8*	*2.2*
All 4-year	*1.4*	*1.3*	*0.3*	*0.2*	*3.1*
All 2-year/proprietary	*-1.4*	*-1.3*	*-0.3*	*-0.2*	*-3.1*

Note: Excludes those who attended multiple institutions. Details may not add to totals due to rounding.
Source: NCES 1999-2000 and 1989-90, based on McPherson and Schapiro 1998 and 1999

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Table Five: Distribution of full-time, full-year, dependent freshman enrollment by income quintile across institutional types, 1989-90 and 1999-2000

1999-2000	Lowest quintile	Lower middle	Middle	Upper middle	Highest quintile
Private not-for-profit PhD	5.5%	7.7%	7.9%	10.0%	20.3%
Private not-for-profit non-PhD	11.6%	9.9%	13.7%	11.3%	12.9%
Private not-for-profit 2-year	2.0%	1.5%	1.4%	2.0%	1.1%
All private not-for-profit	*19.1%*	*19.1%*	*23.0%*	*23.2%*	*34.3%*
Private for profit	6.4%	3.4%	2.7%	2.4%	1.7%
All private	*25.4%*	*22.5%*	*25.7%*	*25.6%*	*36.0%*
Public 4-year PhD	18.8%	24.2%	22.5%	28.8%	33.7%
Public 4-year non-PHD	15.6%	15.7%	14.5%	13.7%	9.5%
Public 2-year or less	40.3%	37.7%	37.2%	31.9%	20.8%
All public	*74.6%*	*77.5%*	*74.3%*	*74.4%*	*64.0%*
All 4-year	*51.4%*	*57.5%*	*58.6%*	*63.7%*	*76.4%*
All 2-year/proprietary	*48.6%*	*42.6%*	*41.4%*	*36.3%*	*23.6%*
Total	100.0%	100.0%	100.0%	100.0%	100.0%

1989-90	Lowest quintile	Lowest middle	Middle	Upper middle	Highest quintile
Private not-for-profit PhD	6.1%	5.5%	6.2%	8.2%	17.6%
Private not-for-profit non-PhD	14.5%	12.1%	13.2%	12.6%	16.8%
Private not-for-profit 2-year	2.4%	1.8%	1.6%	1.8%	1.6%
All private not-for-profit	*22.9%*	*19.3%*	*21.0%*	*22.6%*	*36.1%*
Private for profit	7.7%	7.6%	5.3%	3.6%	2.1%
All private	*30.6%*	*26.9%*	*26.3%*	*26.2%*	*38.2%*
Public 4-year PhD	21.4%	19.6%	21.3%	24.7%	30.0%
Public 4-year non-PHD	20.4%	18.8%	20.7%	19.0%	18.3%
Public 2-year or less	27.7%	34.7%	31.7%	30.1%	13.5%
All public	*69.4%*	*73.1%*	*73.7%*	*73.8%*	*61.8%*
All 4-year	*62.3%*	*56.0%*	*61.4%*	*64.5%*	*82.7%*
All 2-year/proprietary	*37.7%*	*44.0%*	*38.6%*	*35.5%*	*17.3%*
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Percentage point change:	Lowest quintile	Lowest middle	Middle	Upper middle	Highest quintile
Private not-for-profit PhD	-0.6	2.2	1.7	1.7	2.7
Private not-for-profit non-PhD	-2.9	-2.2	0.5	-1.3	-3.9
Private not-for-profit 2-year	-0.4	-0.3	-0.2	0.2	-0.6
All private not-for-profit	*-3.8*	*-0.2*	*2.0*	*0.6*	*-1.8*
Private for profit	-1.3	-4.2	-2.6	-1.2	-0.4
All private	*-5.2*	*-4.4*	*-0.5*	*-0.6*	*-2.2*
Public 4-year PhD	-2.6	4.6	1.2	4.1	3.8
Public 4-year non-PHD	-4.8	-3.2	-6.2	-5.3	-8.8
Public 2-year or less	12.6	3.0	5.5	1.8	7.3
All public	*5.2*	*4.4*	*0.5*	*0.6*	*2.2*
All 4-year	*-10.9*	*1.5*	*-2.8*	*-0.8*	*-6.3*
All 2-year/proprietary	*10.8*	*-1.4*	*2.8*	*0.8*	*6.3*

Note: Excludes those who attended multiple institutions. Details may not add to totals due to rounding. • Source: NCES 1999-2000 and 1989-90, based on McPherson and Schapiro 1998 and 1999

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Private not-for-profit four-year institutions were slightly more likely to enroll students whose parents had an advanced degree.

Longitudinal research studies have found similar differences in the characteristics of students attending various types of institutions.[18] Ultimately, it appears that the greatest difference in the distribution of undergraduates may occur at the extremes—the lowest-income students are concentrated in the lowest-priced institutions, and the highest-income students dominate at the highest-priced institutions (Lee 1999).

Increasing stratification over time

The next level of analysis regarding the status of choice looks at the issue of change over time, and whether public policies appear to be helping to encourage an *increasing* level of choice for all students. What kinds of shifts have occurred over the last decade, in terms of the proportions of students from certain income backgrounds that are attending specific types of institutions? The higher education community is concerned about the concentration of disadvantaged students in certain institutions moving in the wrong direction—that is, rather than seeing an improvement in choice as a result of public policy, choice actually may be declining for disadvantaged students as tuitions increase and financial aid (especially federal need-based grants) fails to keep pace. Thus, higher education may be becoming increasingly stratified by income.

One recent study raised this issue after an analysis of changes in freshmen enrollment patterns between 1981 and 1998 (McPherson and Schapiro 1998 and 1999).[19] The study found that lower-income students were clustered in community colleges and that the likelihood of a student attending a four-year institution (especially a private one) depends on their parents' income. Between 1981 and 1998, the proportion of lower- and lower-middle-income students attending public two-year institutions increased, while the proportions of all other income groups fell. At the same time, the proportion of upper-income students attending universities increased over time, the proportion attending less selective, private four-year colleges decreased, and the proportion attending public four-year institutions increased.

To replicate the analysis, changes over the decade between 1989-90 and 1999-2000 were examined.[20] Broad changes in student characteristics and financing occurred over this period—for example, the definition of independent student changed in 1993, which made it more difficult to qualify as an independent student (see box on page 25). Although the cross-sections of the two years are not strictly comparable, it is useful to look at the distribution of freshmen enrollment at the beginning of the decade and at its end.

In 1999-2000, the majority of freshmen in all income quintiles attended public two-year institutions. (Table

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[18] For example, a longitudinal study of 1988 eighth graders found that of those who enrolled by 1994, almost 50 percent of Hispanics enrolled in public two-year institutions, and that higher percentages of students in the higher SES and test quartiles enrolled in private four-year institutions (Sanderson et al. 1996). Among 1988 eighth graders who enrolled by 1994, low-income students were less likely to attend four-year institutions than higher-income students, even among high test score students, and low-income students were disproportionately found in public institutions, even within the group of high test score students (Akerhielm et al. 1998).

[19] McPherson and Schapiro (1998 and 1999) used self-reported survey data of first-time, full-time freshman, from a dataset in which relatively few community colleges are represented.

[20] The benefit of the dataset used by McPherson and Schapiro (1998 and 1999) is that they were able to group institutions by selectivity. However, the NPSAS data for 1999-2000 does not allow this as well. In the following analysis, "PhD institutions" were used as a proxy for more selective institutions (as opposed to "non-PhD institutions"). Although this is an imperfect proxy, the data reveal that PhD institutions tend to be more expensive than non-PhD institutions, and their students tend to have higher test scores. In 1999-2000, the average tuition and fees faced by first-year dependent undergraduates attending public PhD-granting institutions were $3,980, compared with $2,729 at public non-PhD institutions (the respective figures were $17,035 and $11,428 at private not-for-profit institutions). In addition, the average SAT combined score percentile rank for first-year dependent undergraduates attending public PhD-granting institutions was 60, compared to 41 at public non-PhD institutions (the respective figures were 69 and 60 at private not-for-profit institutions).

Table Six: Distribution of part time, part-year, or mixed independent freshman enrollment by income quintile across institutional types, 1989-90 and 1999-2000

1999-2000	Lowest quintile	Lower middle	Middle	Upper middle	Highest quintile
Private not-for-profit PhD	0.3%	1.3%	0.7%	0.7%	1.3%
Private not-for-profit non-PhD	3.0%	3.2%	2.2%	4.1%	4.0%
Private not-for-profit 2-year	1.6%	1.3%	0.6%	0.4%	0.4%
All private not-for-profit	*4.9%*	*5.8%*	*3.4%*	*5.2%*	*5.7%*
Private for profit	21.8%	14.1%	9.4%	6.6%	3.7%
All private	*26.7%*	*20.0%*	*12.9%*	*11.8%*	*9.4%*
Public 4-year PhD	1.9%	2.7%	2.6%	2.8%	3.0%
Public 4-year non-PHD	5.3%	3.6%	4.8%	4.6%	4.8%
Public 2-year or less	66.1%	73.7%	79.8%	80.9%	82.9%
All public	*73.3%*	*80.1%*	*87.1%*	*88.2%*	*90.6%*
All 4-year	*10.6%*	*10.9%*	*10.2%*	*12.1%*	*13.0%*
All 2-year/proprietary	*89.4%*	*89.1%*	*89.8%*	*87.9%*	*87.0%*
Total	100.0%	100.0%	100.0%	100.0%	100.0%

1989-90	Lowest quintile	Lowest middle	Middle	Upper middle	Highest quintile
Private not-for-profit PhD	1.5%	1.2%	1.0%	1.4%	1.2%
Private not-for-profit non-PhD	1.5%	2.2%	2.7%	3.7%	4.7%
Private not-for-profit 2-year	2.0%	1.5%	1.7%	1.8%	1.0%
All private not-for-profit	*5.0%*	*4.9%*	*5.4%*	*6.9%*	*6.9%*
Private for profit	28.3%	17.6%	11.7%	7.3%	5.2%
All private	*33.3%*	*22.5%*	*17.1%*	*14.2%*	*12.0%*
Public 4-year PhD	2.5%	3.6%	3.2%	2.3%	3.2%
Public 4-year non-PHD	4.6%	3.9%	3.7%	4.1%	3.8%
Public 2-year or less	59.6%	70.0%	76.0%	79.4%	80.9%
All public	*66.7%*	*77.5%*	*82.9%*	*85.8%*	*88.0%*
All 4-year	*10.1%*	*10.9%*	*10.7%*	*11.5%*	*12.9%*
All 2-year/proprietary	*89.9%*	*89.1%*	*89.4%*	*88.5%*	*87.1%*
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Percentage point change:	Lowest quintile	Lowest middle	Middle	Upper middle	Highest quintile
Private not-for-profit PhD	-1.2	0.2	-0.3	-0.7	0.1
Private not-for-profit non-PhD	1.5	1.0	-0.5	0.4	-0.7
Private not-for-profit 2-year	-0.4	-0.2	-1.1	-1.4	-0.5
All private not-for-profit	*-0.1*	*0.9*	*-2.0*	*-1.7*	*-1.2*
Private for profit	-6.6	-3.5	-2.3	-0.8	-1.4
All private	*-6.6*	*-2.5*	*-4.2*	*-2.4*	*-2.6*
Public 4-year PhD	-0.6	-0.9	-0.7	0.5	-0.3
Public 4-year non-PHD	0.8	-0.3	1.1	0.4	1.0
Public 2-year or less	6.5	3.7	3.8	1.5	1.9
All public	*6.6*	*2.5*	*4.2*	*2.4*	*2.6*
All 4-year	*0.5*	*0.0*	*-0.5*	*0.6*	*0.1*
All 2-year/proprietary	*-0.5*	*0.0*	*0.4*	*-0.6*	*-0.1*

Note: Excludes those who attended multiple institutions. Details may not add to totals due to rounding. • *Source: NCES 1999-2000 and 1989-90, based on McPherson and Schapiro 1998 and 1999*

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The context of postsecondary education in the 1990s

In examining the changes in students' enrollment distribution over the decade, it is important to keep in mind several changes in public policies, competitive pressures, and the types of students enrolling in postsecondary education over this period.

Transition to college. More students enrolled in higher education over this period. Continuing the trend from previous decades, college enrollment rates of high school graduates increased slightly over the decade, from 60 percent in 1990 to 63 percent in 1999. In particular, the enrollment rates of African-American high school graduates increased, from 46 percent to 59 percent (NCES 2002).

Overall, total fall enrollment in higher education institutions increased by about 4 percent between 1990 and 1997. However, the number of first-time freshmen declined between 1990 and 1997, by about 5 percent (NCES 2002).

Composition of students. The "traditional" student—dependent, attending full-time, and working no more than part-time—is no longer typical of postsecondary education. By 1999-2000, three-quarters of all undergraduates had at least one "non-traditional" characteristic (delayed enrollment, part-time attendance, working full-time, financially independent, single parent, has dependents, or no high school diploma), although the proportion varies by type of institution (NCES 2002b).

Although the changes were not as drastic as in previous decades, the types of students enrolling in postsecondary education have changed over the past decade. The percentage of first-year undergraduates who were non-white increased from 28 percent in 1989-90 to 36 percent in 1999-2000, for example, and the percentage who were single parents increased from 10 percent to 14 percent (NCES 1989-90 and 1999-2000).

At the same time, the percentage of first-year undergraduates who were classified as dependent students increased, from 46 percent to 52 percent (NCES 1989-90 and 1999-2000). The definition of an independent student (for federal financial aid purposes) changed through the 1992 Higher Education Act (HEA) amendments, however, so it was expected that fewer students would qualify as financially independent.

Financial aid policy. Over the period 1989-90 to 1999-2000, a higher proportion of students tended to receive financial aid, whether from government, institutional, or private sources. In fact, the percentage of first-year undergraduates who received aid from any source increased from 41 percent to 56 percent over this period (NCES 1989-90 and 1999-2000). At the same time, there were shifts in the type of aid awarded to postsecondary students. For example, in 1989-90 grants made up 48 percent of total aid to students and loans made up 49 percent; by 1999-2000, the percentage for grants had decreased to 40 percent of all aid, while loans had increased to 59 percent (College Board 2000).

Meanwhile, the 1992 reauthorization of the HEA affected the need analysis methodology used to allocate federal, need-based student aid. For dependent students in particular, these changes included: 1) exclusion of home equity as an asset; 2) some low-income parents were no longer required to show assets; 3) the minimum contribution from students was eliminated; and 4) the amount expected from student earnings was reduced. All of these changes worked toward lower EFCs and a larger percentage of students qualifying for need-based aid. The changes relevant to independent students were more mixed.

The reauthorization and subsequent legislation during this period also enacted increases in the maximum

context • *continued*

award levels for Pell Grants and other grant programs, as well as increases in federal loan limits. Finally, this period saw the creation of the federal unsubsidized loan program and, more recently, a substantial expansion of tax benefits for students and their families, especially those in the middle-income brackets.

Structural changes. Some sectors of postsecondary education restructured over this period, in terms of closures, consolidations, loss of federal Title IV aid eligibility, or refocusing of programmatic offerings. This frequently occurred in response to competitive pressures and to federal regulatory policies regarding loan default rates. In particular, the proprietary sector underwent substantial transformation, with hundreds of trade schools closing after losing their eligibility for federal aid programs and through consolidations occurring within the industry. Some for-profit sectors experienced tremendous growth, however, especially those that are degree-granting (Burd 1997; Borrego 2001; NCES 2002).

The adoption of new technologies in postsecondary education had a substantial impact on the industry. New providers emerged to compete with existing higher education institutions in providing distance learning opportunities. In general, these shifts expanded the number of alternatives available to students.

Finally, the past decade saw a huge increase in institutional marketing, as part of efforts to improve the quality of consumer-based information about institutional alternatives. This increase in information is important in that many students and their families are more aware of the broad array of postsecondary options available to them.

Four.) In general, however, students from higher income quintiles were more likely to attend four-year institutions (particularly PhD-granting institutions), while students from lower income quintiles were more likely to attend proprietary schools. Over time—since 1989-90—the primary shift appears to have been away from proprietary schools and toward public two-year institutions, especially among the lower income quintiles. These trends change, however, for different types of freshmen, based on dependency and attendance status.

Slightly more than half (52 percent) of all first-year undergraduates were dependent students in 1999-2000; of these students, 51 percent attended exclusively on a full-time, full-year basis. Thus, what one might call "traditional" freshmen—i.e., those who are dependent students attending on a full-time, full-year basis—comprise a minority of the freshmen population, and it makes sense to look at them separately from other types of students.

- For these more traditional freshmen (full-time, full-year, dependent students), substantial percentages of students in all income quintiles attended public two-year institutions in 1999-2000, but not majorities. (Table Five.) The percentages were related to income quintile. Higher-income quintiles were more likely to attend most types of four-year institutions, and within four-year institutions, were more likely to attend more selective (PhD-granting) institutions. Over time, several shifts occurred. The lowest-income quintile saw a shift toward public two-year institutions. The lower-middle-income quintile saw simultaneous movements away from proprietary and non-PhD four-year institutions, toward both public two-year and PhD four-year institutions. A similar situation occurred in the higher-income quintiles—shifts away from less selective four-year schools, toward both public two-year institutions and more selective, PhD four-year institutions.[21]

[21] Not all of the differences between years are statistically significant.

- On the other hand, large majorities of the most "non-traditional" freshmen were attending two-year/proprietary institutions in 1999-2000. Focusing on the group of first-year undergraduates who were both financially independent and attending either part time or part year (Table Six), students from the lower quintiles were more likely to be attending proprietary schools than students from the higher income quintiles. Over time, there was a substantial shift in enrollment away from proprietary schools and toward public two-year institutions (especially among students from the lower income quintiles), similar to the trend among freshmen as a whole.[22]

These results suggest that changes in the composition of postsecondary enrollment were occurring over the past decade, with many non-traditional students choosing to enroll in public two-year institutions instead of proprietary schools, and more traditional freshmen presenting a complicated pattern related to family income.

Enrollment distribution data in the context of the choice process

The previous two sections have suggested that students with certain characteristics are less likely to be enrolled at certain types of institutions and that changes in enrollment patterns have occurred over time, suggesting a movement toward lower-priced institutions (especially community colleges) for many groups of students. These patterns alone, however, are not enough to conclude that disadvantaged students are constrained by monetary barriers to choice. Ideally, the previous analyses would be conducted with controls for academic and other factors in order to isolate the potential effects of monetary factors; but the dataset used is not conducive to such analysis.[23]

Prior research (using other datasets) suggests that the reality is quite complex. For one thing, most students seem able to attend what they label as their "first choice" institution. Among 1988 eighth graders who enrolled in four-year institutions by 1994, for example, 71 percent indicated that they were able to attend their first or second choice institution, with no differences by race/ethnicity, SES, and test quartiles (Sanderson et al. 1996). This again reinforces the notion that outcomes cannot be evaluated without reference to the entire choice process; decisions to narrow the choice set come at an earlier stage, and so a student's "first choice" institution was influenced by a number of factors—both monetary and non-monetary—long before an actual selection is made.[24] Another study (Berkner and Chavez 1997), using the same longitudinal data, found that among 1988 eighth graders who graduated from high school, low-income students were able to attend four-year colleges at the same rate as students from middle-income families if they took the steps necessary to become college-qualified and enroll in a four-year institution—take college preparatory classes, entrance exams, and apply to college. In other words, college-qualified, low-income students who were accepted for admission to public and private four-year institutions were just as likely to enroll as middle- and upper-income students. On the other hand,low SES and minority students are *less likely to take those steps*, and therefore less likely to enroll in four-year institutions overall. Importantly, even low-income students who were academically qualified were less likely to take the tests and apply.

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[22] Unlike the total freshmen population, however, the differences between years are not statistically significant.

[23] Test scores (SAT and ACT) are available in NPSAS and could be used as a proxy for academic ability, but they are only available for a minority of students. Better measures, such as high school grades and curricula, can be used in longitudinal datasets such as NELS.

[24] Lest one think that there is complete consensus on which factors influence the narrowing of institutions, the *Chronicle of Higher Education* recently pointed to continuing debate on whether students narrow their aspirations because of academic preparation/awareness issues, or affordability issues.

Taken together, the research suggests that at the aggregate level, a cross-sectional examination of outcomes supports the idea that unequal educational opportunity exists for students with different income backgrounds, particularly if choice is defined as the ability to attend institutions other than the lowest-priced institution. From a longitudinal perspective, however, the role of socioeconomic background in the type of college attended remains important, but appears to diminish in comparison with factors such as academic preparation and the application process. In general, students who acquire college qualifications while still in high school are more likely to enroll in college, and in four-year institutions, than those who do not. Nonetheless, low SES students are still less likely to obtain the necessary academic qualifications, and even if they do, they are less likely to take the steps necessary for college enrollment.[25]

[25] Most of this research was conducted for students making an immediate transition from high school to college. The conclusions may be quite different for non-traditional students, especially those who have been out of high school for some time.

a level deeper

examination of financial aid patterns

If the financial aid system as a whole (or federal need-based aid specifically) is promoting choice, one might expect to find no substantial differences by family income in the enrollment rates of qualified students at particular types of institutions. The previous chapter, in noting that low-income, college-qualified students may be enrolling at four-year (or more selective) institutions at rates similar to those of their higher-income counterparts, suggested that monetary factors may not be posing an obstacle for these students.

However, the analysis is not conclusive; it does not reveal whether or not the absence of financial aid would present a problem or influence student behavior, or if current amounts of financial aid, at minimum, are necessary to maintain the current level of choice for these particular students. And, it does not reveal anything about whether an influence on choice is even a possibility, given the way financial aid is allocated.

The next level of outcomes analysis examines the effectiveness of financial aid policy by looking directly at patterns of financial aid—especially federal need-based aid—to see if the aid is being targeted in a way that would provide choice (all else being equal). This approach assumes that if aid were promoting choice, it would be allocated in certain identifiable ways. Outcomes data may not be able to measure directly an influence on student behavior, but outcomes can measure whether aid is being allocated the way it was intended.

In particular, federal need-based aid is allocated through the federal need analysis framework, thereby serving the goal of choice directly and indirectly. In the most direct sense, federal aid awards are based on a student's "need" for financial assistance, defined as the difference between the total price of attending an institution and the amount students and their families can contribute (the EFC, which represents ability to pay).[26] The components of the formula mean that the calculation of need can reflect low levels of family resources, the high price of attending a particular institution, or both. Federal need-based financial aid is therefore expected to foster student *access* because calculated need increases as family ability to pay decreases; it is expected to encourage student *choice* because need increases as a student's price of attendance increases.

The other aspect of the federal need analysis framework is the expectation that federal need-based aid (especially grants) provides a de facto platform for the neediest students, a platform on which other types of aid may be awarded. Federal need-based aid frequently does not cover all of a student's need, as calculated through the need analysis formula. Financial aid from other sources—including state governments, colleges'

[26] According to the federal need analysis methodology (FM), the EFC—an attempt to objectively measure families' ability to pay—is calculated using parent and student income, assets, and family size, among other factors. It is helpful to think about need analysis in two stages: first, the EFC is calculated; then, awards of aid are made, based on the difference between the price of attendance for a student and the EFC (the amount of financial need). One caveat: certain financial assistance (such as veterans benefits) must be subtracted from the price of attendance before federal aid is awarded. This analysis assumes that the EFC represents family ability to pay somewhat accurately; however, that is also an issue of some debate.

internal funds, private donors, and federal non-need-based aid such as unsubsidized loans—therefore acts in combination with federal need-based aid in meeting need. Much (but not all) of the non-federal aid is explicitly based on need, although the calculation may differ.[27] Overall, aid from other sources also promotes student choice, whether in combination with federal need-based aid, or not.

Again, the following sections are based on previous research models updated with the most recent data available. Each of these sections examines the targeting of financial aid from a slightly different perspective; together, these perspectives help explain how various types of financial aid are allocated.

System-wide targeting of financial aid

In evaluating whether financial aid patterns are in line with the goal of promoting choice, the framework of the federal need analysis system argues for a view of the financing system as a whole. If financial aid overall is promoting choice, one would expect to see that students attending higher-priced institutions are more likely to receive aid, all other things being equal. Of students with the same level of family income, those attending more expensive institutions should be more likely to receive financial aid, and to receive higher average amounts.

The Congressional Budget Office (1991) tested this hypothesis by comparing how student aid is supposed to be awarded with how it actually is allocated. CBO examined the patterns of full-time, dependent undergraduates receiving financial aid from all sources, as well as the average amounts received, in Fall 1986, by family income background, at different types of institutions.[28] They found that the percentages of students receiving aid were higher at more expensive institutions (as measured by the type of institution), and that students most likely to receive aid were in the lowest family income category attending the most expensive institutions.[29] Similar patterns existed for federal and state aid as for all aid, but receipt of institutional aid depended more on the price of attendance than on the income level. In terms of the type of aid received, grant aid patterns were similar to patterns for overall aid, while the percentages of students receiving loans depended more on the price of attendance and less on family income background than did the percentages of students receiving any aid. This suggested to CBO that loans (and institutional aid) were more important in expanding choice than access, in comparison with grants (and federal and state aid).

Using the CBO methodology, this analysis examined more recent patterns of financial aid by type of institution and family income background in 1999-2000 to see if aid is being targeted to promote choice. (Table Seven.) Controlling for some of the other factors that might affect aid distribution (attendance intensity and dependency status) involved considering the percentages of full-time, full-year dependent undergraduates receiving aid, and the average amounts received. Patterns of aid

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[27] States and institutions often use the federal need analysis methodology, but may use a separate formula to calculate eligibility for aid awards. Aid packaging models generally start with outside funds first (federal and state), then follow with institutional funds last if needed; with higher income students who do not qualify for need-based aid, however, institutional aid may be the first in the package. This process leaves room for much discretion, especially regarding the use of institutional grants and federal loans.

[28] CBO (1991) examined only full-time, dependent undergraduates, to control for other factors that might influence financial aid patterns (awards of financial aid take into account such factors as attendance patterns and dependency status). Using full-time, full-year, dependent undergraduates allows a relatively homogeneous group with less variation in prices within institutional types. Although independent, part-time, and part-year students are a sizable and growing proportion of undergraduates, it is more problematic to use this framework for this group of students. There is wide variation in terms of tuition and fees and financial aid received, as well as different attendance and employment patterns, which would be difficult to take into account for the analysis.

[29] The CBO analysis assumed that public two-year institutions are the least expensive institutions, followed by public four-year, proprietary, and finally private, not-for-profit four-year institutions as the most expensive. This replication uses the same premise, i.e., that institutional type can be used as a proxy for price levels. In fact, in 1999-2000, tuition and fees for undergraduate students ranged from $1,338 at public two-year institutions, to $3,349 at public four-year institutions, to $14,588 at private four-year institutions (NCES 2002).

Table Seven: Percentages of full-time, full-year dependent undergraduates receiving aid and average amounts received, by income quintile and type of institution, 1999-2000

	PERCENT RECEIVING					AVERAGE AMOUNT				
Any aid	**Lowest quintile**	**Lower middle**	**Middle**	**Upper middle**	**Highest quintile**	**Lowest quintile**	**Lower middle**	**Middle**	**Upper middle**	**Highest quintile**
Public 2-year or less	77.1%	59.8%	39.7%	32.2%	26.7%	$4,107	$3,290	$2,405	$2,531	—
Public 4-year	88.1%	81.0%	73.7%	63.9%	50.9%	$7,872	$7,070	$6,113	$5,919	$5,701
Private for-profit	92.4%	89.3%	91.8%	89.5%	68.1%	$9,167	$9,992	$9,611	$10,626	—
Private not-for-profit 4-year	95.8%	88.3%	87.4%	87.3%	68.9%	$14,112	$16,116	$15,403	$14,275	$12,571
Need-based aid	**Lowest quintile**	**Lower middle**	**Middle**	**Upper middle**	**Highest quintile**	**Lowest quintile**	**Lower middle**	**Middle**	**Upper middle**	**Highest quintile**
Public 2-year or less	74.2%	52.3%	20.2%	8.1%	4.6%	$3,629	$2,563	$1,521	—	—
Public 4-year	82.5%	68.3%	50.7%	26.7%	10.5%	$6,558	$5,360	$3,887	$3,041	$2,691
Private for-profit	92.1%	88.1%	77.4%	67.6%	23.5%	$5,734	$5,193	$3,958	$3,822	—
Private not-for-profit 4-year	92.8%	82.1%	77.1%	66.1%	36.4%	$10,981	$10,738	$9,878	$7,928	$6,272
Grants	**Lowest quintile**	**Lower middle**	**Middle**	**Upper middle**	**Highest quintile**	**Lowest quintile**	**Lower middle**	**Middle**	**Upper middle**	**Highest quintile**
Public 2-year or less	75.1%	53.6%	31.8%	23.4%	18.9%	$3,316	$2,253	$1,237	$1,867	—
Public 4-year	85.2%	68.5%	49.8%	35.7%	30.6%	$4,720	$3,977	$3,067	$3,218	$3,332
Private for-profit	84.9%	65.7%	38.9%	29.5%	17.8%	$3,928	$3,263	—	—	—
Private not-for-profit 4-year	93.7%	83.6%	77.9%	79.1%	56.1%	$9,267	$9,999	$9,679	$8,409	$7,854
Loans	**Lowest quintile**	**Lower middle**	**Middle**	**Upper middle**	**Highest quintile**	**Lowest quintile**	**Lower middle**	**Middle**	**Upper middle**	**Highest quintile**
Public 2-year or less	15.6%	17.8%	15.3%	11.5%	4.6%	$2,870	$3,651	—	—	—
Public 4-year	53.2%	54.0%	50.8%	40.6%	26.9%	$4,302	$4,311	$4,370	$4,665	$4,658
Private for-profit	69.0%	80.2%	84.0%	82.8%	57.4%	$5,246	$5,785	$5,266	$6,110	—
Private not-for-profit 4-year	64.5%	69.5%	71.5%	66.3%	39.2%	$5,951	$6,252	$5,840	$6,080	$6,169

Table Seven: Percentages of full-time, full-year, dependent undergraduates receiving aid and average amounts received, by income *quintile and type of institution, 1999-2000*

	PERCENT RECEIVING					AVERAGE AMOUNT				
Work study	**Lowest quintile**	**Lower middle**	**Middle**	**Upper middle**	**Highest quintile**	**Lowest quintile**	**Lower middle**	**middle**	**Upper middle**	**Highest quintile**
Public 2-year or less	9.1%	5.3%	3.0%	0.6%	0.0%	—	—	—	—	
Public 4-year	17.1%	15.9%	10.9%	4.4%	2.7%	$1,753	$1,575	$1,833	$1,462	$2,012
Private for-profit	2.6%	1.9%	6.5%	0.0%	0.0%	—	—	—	—	—
Private not-for-profit 4-year	35.7%	39.1%	34.6%	29.2%	15.1%	$1,443	$1,539	$1,671	$1,619	$1,710
Federal Aid	**Lowest quintile**	**Lower middle**	**Middle**	**Upper middle**	**Highest quintile**	**Lowest quintile**	**Lower middle**	**Middle**	**Upper middle**	**Highest quintile**
Public 2-year or less	70.2%	45.0%	16.3%	12.1%	5.7%	$3,273	$2,593	$2,492	—	—
Public 4-year	80.2%	65.6%	52.7%	40.5%	27.1%	$5,717	$5,241	$5,012	$5,527	$5,889
Private for-profit	92.1%	89.0%	85.4%	82.0%	56.0%	$7,938	$7,923	$7,907	$9,829	—
Private not-for-profit 4-year	92.1%	78.6%	72.5%	65.7%	39.9%	$7,140	$6,850	$6,715	$6,562	$8,097
State Aid	**Lowest quintile**	**Lower middle**	**Middle**	**Upper middle**	**Highest quintile**	**Lowest quintile**	**Lower middle**	**Middle**	**Upper middle**	**Highest quintile**
Public 2-year or less	35.5%	27.9%	12.2%	7.3%	4.8%	$1,330	$1,457	—	—	—
Public 4-year	39.4%	33.5%	22.1%	9.6%	7.0%	$2,190	$2,263	$1,894	$2,036	$1,957
Private for-profit	26.1%	23.8%	15.7%	10.0%	2.3%	$2,656	—	—	—	—
Private not-for-profit 4-year	43.9%	40.9%	33.2%	20.0%	8.3%	$2,894	$3,174	$2,726	$2,606	$2,750
Institutional Aid	**Lowest quintile**	**Lower middle**	**Middle**	**Upper middle**	**Highest quintile**	**Lowest quintile**	**Lower middle**	**Middle**	**Upper middle**	**Highest quintile**
Public 2-year or less	24.7%	16.2%	12.1%	8.6%	11.1%	$775	—	—	—	—
Public 4-year	31.9%	32.2%	26.0%	21.4%	18.7%	$2,698	$2,527	$3,028	$3,110	$3,415
Private for-profit	13.0%	26.7%	24.7%	15.1%	12.8%	—	—	—	—	—
Private not-for-profit 4-year	61.5%	70.3%	72.1%	73.7%	52.1%	$7,288	$8,265	$8,462	$7,644	$7,291

— means not enough sample size to calculate.

Note: Average amounts are for those receiving aid. PLUS loans are excluded from the analysis. Federal aid also excludes verterans/DOD benefits. • *Source: NCES 1999-2000, based on CBO 1991*

from all sources were used to assess the direction of the financing system as a whole, and patterns of federal aid specifically were explored to determine if federal aid is being targeted as intended.

- The highest percentage of students receiving any aid was students in the lowest income quintile attending the most expensive type of institution. In general, higher proportions of students received aid at more expensive institutions, in all income quintiles. For example, 40 percent of middle-income students attending public two-year institutions received aid, compared to 87 percent of those attending private, not-for-profit, four-year institutions. Also, average amounts of aid received tended to be higher at more expensive institutions.
- Regarding the source of aid, the percentages of students receiving federal and state aid were similar to the pattern of overall aid. For institutional aid, substantially higher proportions of students received aid at private not-for-profit four-year institutions than at other institutional types, especially in the middle-income quintiles. This suggests that from the student perspective, a primary function of institutional aid may be to promote choice of private not-for-profit four-year institutions, which tend to be the most expensive institutions.
- Regarding the type of aid, the percentages of students receiving grant aid tended to follow the pattern of overall aid, although the percentages appeared to be tied more to family income than to type of institution. Other types of aid differed, however. The highest percentages of students receiving work-study aid, by far, were at private not-for-profit four-year institutions. The percentages of students receiving loan aid appeared to be tied much more to the type of institution (price) than to family income, suggesting that loans were promoting choice more so than grants.

Financial aid and ability to pay

To further evaluate the targeting of financial aid, the CBO study compared net prices and expected family contributions (EFC). Net price is defined as the price of attendance after subtracting financial aid from all sources, or the actual amount a student must pay for higher education. The logic of federal need analysis (as well as the implied framework for financial aid overall) suggests that net prices are "reasonable" if they are less than or equal to the EFC; a student can then attend an institution without paying more than need analysis has determined he and his family can pay. In this formulation, the standard of net price equal to or less than EFC can be used to determine whether *access* is being achieved at a particular type of institution.

But, if the net price exceeds the EFC—as it does for many groups of students—then a certain amount of "unmet need" exists.[30] CBO argued that some unmet need will generally exist because otherwise, students would have strong incentives to choose the most expensive school that would admit them and colleges would have incentives to raise their tuitions. Therefore, evaluating the targeting of financial aid toward *choice* would involve determining the extent to which net price can rise relative to EFC at schools of choice and still be reasonable. How much unmet need is reasonable for students who want to choose more expensive institutions? Again, this question is best addressed within the context of the financing system as a whole, of which federal need-based aid awards are one component.

The CBO analysis worked within the framework of two definitions of choice, one based upon level of institution (two-year/four-year) and one based upon control (public/private). Where public two-year institutions were the institutions of basic access, then four-year colleges became the institutions of choice; where public four-year institutions

[30] The concept of unmet need is an artificial construct, based on estimates of financial need. Perhaps a better way of thinking about it is the portion of estimated need that has not been met through the financial aid process.

Table Eight: Ratio of net price to expected family contribution (EFC) for full-time, full-year, dependent undergraduates, by income quintile and type of institution, 1999-2000

Net price = price of attendance less all aid

	Lowest quintile	Lower middle	Middle	Upper middle	Highest quintile
Public 2-year or less	532%	218%	94%	61%	30%
Public 4-year	356%	189%	104%	70%	40%
Private for-profit	987%	259%	90%	81%	58%
Private not-for-profit 4-year	569%	274%	150%	98%	73%

Adjusted net price = price of attendance less grant aid and 40 percent of loan aid

	Lowest quintile	Lower middle	Middle	Upper middle	Highest quintile
Public 2-year or less	582%	234%	99%	63%	31%
Public 4-year	507%	250%	133%	85%	46%
Private for-profit	1422%	386%	145%	131%	73%
Private not-for-profit 4-year	862%	398%	209%	130%	85%

Net price exceeds EFC = ☐
Net price is lower than EFC = ☐

Note: Analysis includes students who did not receive aid. Price of attendance is the attendance-adjusted student budget, and includes tuition, room, board, and other expenses. Loan aid excludes PLUS loans. • *Source: NCES 1999-2000, based on CBO 1991*

were the institutions of basic access, then private four-year institutions became the institutions of choice. The study found that students in most family income categories (with the exception of the lower-middle-income category) who chose a public four-year institution over a public two-year institution had an average net price that was below the average EFC, suggesting some level of choice for students. On the other hand, choosing private institutions resulted in net prices that were higher than EFCs, on average.[31]

Using data for 1999-2000, the following was found for full-time, full-year dependent undergraduates (Table Eight):

- Within each income quintile, the ratio of net price to EFC tends to increase with more expensive institutions. At the same time, the ratio of net price to EFC at schools of choice (under both definitions) is higher for students in the lower family income quintiles. Together, these tendencies suggest that the choice of more expensive institutions is a relatively more costly one for students from low-income quintiles than for students from high-income quintiles.

- The choice of more expensive institutions for middle and upper income students involved reasonable increases in the ratio of net price to EFC, under both definitions of choice. For example, for middle-income students, the ratio increased from 94 percent at public two-year institutions to 104 percent at public four-year institutions, and to 150 percent if they chose to attend private not-for-profit four-year institutions. And for the two highest income categories, a choice of even the most expensive type of institution still resulted in net prices that were less than EFCs (i.e., ratios below 100 percent).

[31] When only loan and work-study subsidies were counted in their definition of financial aid, net prices exceeded EFCs even at public two-year institutions for most income categories.

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- On the other hand, students in the lower income quintiles had net prices that far exceeded their EFCs, even at public two-year institutions. For example, the ratio of net price to EFC faced by the lowest-income students attending public two-year institutions was over 500 percent. Since this pattern is true across all types of institutions, this type of analysis is less useful in examining choice for economically disadvantaged students. However, it is interesting to note that for the lowest income quintiles, choosing a public four-year institution over a public two-year institution actually lowers the average ratio of net price to EFC.[32]
- The earlier study found that students in many family income categories could choose a public four-year institution over a public two-year institution and still have an average net price that was below the average EFC. In 1999-2000, this was true only for the highest two income quintiles. This suggests that the ability of the financial aid system to enable the choice of four-year over two-year institutions may have been eroded over time.

These results present a mixed picture of whether financial aid is being awarded in a way that reflects the goal of promoting choice. To an extent, the conclusions depend upon the definition of choice, as well as the income background of the student. If two-year institutions are the standard for meeting access, then one could argue that the current financial aid system is working well if the costs of choosing a public four-year institution over a public two-year institution are reasonable. The data show that for students in the middle and upper income quintiles, making this type of choice involves relatively small increases in the ratio of net price to EFC; for the lowest income quintiles, making this choice may involve a decrease in the ratio, but for these students net prices remain far above EFCs on average. If public four-year institutions represent basic access, then financial aid is being allocated in line with the goal of choice if the costs of choosing proprietary or private four-year institutions are reasonable. In this case, the data again show that making this choice involves relatively small increases in the ratio of net price to EFC for middle and upper income students. For students in the lower income quintiles, however, it would lead to substantial increases in the ratio, within the context of unmet need at all types of institutions.

Proportion of federal aid dedicated to choice

The previous analysis examined the targeting of financial aid within the context of the financing system as a whole. It is also possible to specifically look at the targeting of federal need-based aid, the foundation of the federal need analysis framework (Table Nine).[33] The results show similar patterns, but with a few differences. In general, the ratios of net price to EFC are higher, reflecting the fact that only federal need-based aid was used to reduce the price of attendance. Students in the middle- and upper-middle-income quintiles at more types of institutions face net prices that exceed average EFCs. In addition, the choice of private not-for-profit four-year institutions (over both public four-year institutions, and public two-year institutions) involves substantial increases in the ratio of net price to EFC for almost all income groups, suggesting that non-federal aid (such as institutional aid) may play a significant role in enabling choice at these institutions.

CBO researchers took the analysis a step further by trying to estimate the proportion of federal aid that went toward promoting choice (as opposed to access). To do this, they examined the difference between the (face value) amount of aid awarded at the school of choice and the amount of aid the student would have received attending an average-

[32] This effect virtually disappears when using adjusted aid, suggesting that loans are the primary vehicle reducing unmet need for lower-income students choosing public four-year institutions.

[33] Federal need-based aid includes Pell Grants, campus-based aid such as SEOG and Perkins loans, and Stafford subsidized loans.

Table Nine: Ratio of net price to expected family contribution (EFC) for full-time, full-year, dependent undergraduates, by income quintile and type of institution, 1999-2000

Using only federal need-based aid in calculation of net price

Net price = price of attendance less all federal need-based aid

	Lowest quintile	Lower middle	Middle	Upper middle	Highest quintile
Public 2-year or less	624%	246%	103%	67%	32%
Public 4-year	564%	272%	145%	95%	51%
Private for-profit	1445%	394%	150%	133%	76%
Private not-for-profit 4-year	1251%	567%	292%	176%	103%

Adjusted net price = price of attendance less federal grant aid and 40 percent of federal need-based loan aid

	Lowest quintile	Lower middle	Middle	Upper middle	Highest quintile
Public 2-year or less	661%	257%	105%	68%	32%
Public 4-year	666%	313%	158%	98%	52%
Private for-profit	1605%	439%	163%	143%	77%
Private not-for-profit 4-year	1434%	638%	320%	187%	105%

Net price exceeds EFC = ▭

Net price is lower than EFC = ▭

Note: Analysis includes students who did not receive aid. Price of attendance is the attendance-adjusted student budget, and includes tuition, room, board, and other expenses. Loan aid excludes PLUS loans. Federal need-based loans include Perkins and Stafford subsidized loans.

Source: NCES 1999-2000, based on CBO 1991

Table Ten: Estimated proportion of federal need-based aid used to pay for schools of choice for full-time, full-year, dependent undergraduates, by school of access, type of institution, and income quintile, 1999-2000

	All	Lowest quintile	Lower middle	Middle	Upper middle	Highest quintile
SCHOOL OF ACCESS: PUBLIC 2-YEAR						
Using all aid						
Public 4-year	53%	46%	63%	85%	92%	100%
Private for-profit	75%	51%	70%	91%	98%	100%
Private not-for-profit 4-year	73%	61%	75%	93%	98%	100%
Using adjusted aid						
Public 4-year	34%	34%	50%	85%	88%	84%
Private for-profit	67%	42%	61%	91%	97%	96%
Private not-for-profit 4-year	57%	50%	63%	93%	96%	97%
SCHOOL OF ACCESS: PUBLIC 4-YEAR						
Using all aid						
Private for-profit	47%	8%	21%	38%	71%	74%
Private not-for-profit 4-year	43%	28%	34%	53%	70%	82%
Using adjusted aid						
Private for-profit	50%	12%	22%	42%	72%	72%
Private not-for-profit 4-year	34%	25%	26%	51%	68%	78%

Note: Each ratio is calculated as: (amount of aid at school of choice - amount of aid at school of access)/amount of aid at school of choice. Analysis is based on average amounts of aid for all students, including those who did not receive aid. Adjusted aid is federal grants plus 40 percent of federal need-based loans (Perkins and Stafford subsidized). •Source: NCES 1999-2000, based on CBO 1991

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priced school of access. The following analysis estimates the proportions of federal need-based aid for 1999-2000.[34] Once again, the implications depend on the definition of the basic institution of access, public two-year institutions or public four-year institutions (Table Ten):

- When public two-year institutions are considered the basic institutions of access, about half (53 percent) at public four-year institutions, and about three-quarters at private institutions, of all students' federal need-based aid went to promote choice. This varied by family income, with higher percentages of aid going to promote choice the higher the income quintile. In the highest income quintiles, virtually all of federal need-based aid went to promote choice.
- When public four-year institutions are the basic institutions of access, slightly less than half of federal need-based aid for all students went to promote choice (43 percent of aid for private not-for-profit institutions, 47 percent of aid for proprietary institutions). This varied according to income quintile, with about three-quarters of federal aid promoting choice for the highest income quintiles (compared to less than one-third for the lowest income quintile).

The patterns of federal aid suggest that a substantial portion of need-based aid is being allocated as it was intended with regard to the goal of promoting choice. It is also clear that the extent to which federal aid is consistent with the goal of choice depends on how choice is defined.

[34] At the time of the original CBO report, the major non-need-based federal programs (PLUS loans for parents and Stafford unsubsidized loans) were not a major part of the equation.

conclusions

This report describes the various conceptions of college choice and how they have changed over time. In addition, it highlights what is known about both the process of choice and the factors that influence each step of the process, as well as the outcomes of college choice decisions.

Both the process and the outcomes are useful to policymakers in evaluating public policy. Understanding how students make enrollment decisions helps policymakers decide how and where to intervene to improve progress toward the goal of "choice," however it is defined. Examining where students are actually enrolled helps policymakers determine if policy interventions are "working" and how much more intervention is needed to reach the goal of choice—which again depends on the specific definition of choice. Another part of the outcomes approach involves exploring whether financial aid (a specific policy) is being targeted in the way it was intended to support a specific goal.

The analyses in this report raise several issues:

Choice is not easy to define.
The specific meaning of college choice depends on one's perspective, and usually must be described with reference to something else (the definition of access, for example). In addition, the term "choice" is used frequently as a codeword for specific policy goals. In this sense, choice may mean not just the enabling of options for students, but also may connote issues of institutional quality and the desire to equalize tuition levels between sectors. Sharpening the definition of choice and clarifying the role of specific forms of financial aid in promoting choice will enable better targeted public policy.

Should choice be a goal of federal policy?
And if so, is the way choice is currently expressed through need analysis the appropriate vehicle? The existing framework defines financial "need" in a way that is sensitive to the price of attendance, in order to support the goal of choice. However, this means that students can be defined as "needy" based upon the price of the institution they choose, rather than as a result of disadvantaged economic circumstances. What is the appropriate balance?

Choice is not just about price differentials.
Many non-monetary factors influence students' behavior at various points in the choice process, including academic ability and preparation, institutional characteristics, and other factors. This suggests that early intervention programs and other pre-college activities, as well as K-12 curricula reform efforts, are important aspects of the choice equation.

Data on outcomes suggest that the choices of certain groups of students are constrained.
Low-income students, as well as students with "non-traditional" characteristics, appear to be less likely to enroll at four-year and private institutions than their higher income, traditional counterparts. In addition, changes in enrollment patterns have occurred over time, suggesting a movement toward lower-priced institutions (especially community colleges) for many groups of students. Outcomes data do say something about the "status" of choice and fit the perception that many

students are choosing lower-priced institutions due to increasing tuition levels. However, from outcomes-based analysis alone, it is not clear whether the cause of these differential rates of enrollment is monetary, academic, some other factor, or a combination of factors.

To judge the effectiveness of public policy, and when to effectively intervene, it is important to look at a combination of analyses of student behavior and outcomes.
Altogether, the research suggests that public policies enhance, but do not equalize, choice for certain groups of students. A high proportion of students appear to enroll at their first or second choice institutions, but enrollment patterns suggest that choice may be constrained earlier in the process by a combination of monetary and non-monetary factors. Disadvantaged students who take all of the necessary steps and are college qualified enroll in four-year institutions at similar rates as advantaged students; however, disadvantaged students are less likely to take the requisite steps, even those with high levels of academic ability.

The data present a mixed picture of whether financial aid is being awarded in a way that reflects the goal of promoting choice.
The extent to which aid patterns are consistent with the goal of choice depends not only on how choice is defined, but also on the income background of the student.

The context of the higher education system is important to any evaluation of the status of choice.
Public policies change over time and the composition of students attending postsecondary education institutions and the structure of the industry itself shift in response to competitive pressures and other forces. Given the ongoing patterns of tuition increases—with growing gaps between two-year and four-year tuitions, and public and private tuitions—choice might be eroded even without change in federal policy. Further, given the increases in institutional alternatives and the availability of information, some well-informed groups of students may have experienced an increase in college choice at the same time that other groups faced a decline.

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